Final
Quality Assurance Project Plan

Review and Organization of Existing Environmental Data for Upper Animas Mining District, San Juan County, Colorado

Contract Number W912QR-12-D-0001
Document Control Number 001

July 2015

Prepared for:

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Acronyms and Abbreviations

CB&I	CB&I Federal Services LLC
CEG	Certified Engineering Geologist
CHG	Certified Hydrogeologist
DQO	Data Quality Objective
NA	not applicable
PE	Professional Engineer
PG	Professional Geologist
PM	project manager
PMP	Project Management Professional
POC	point of contact
PWS	Performance Work Statement
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
QSD	Qualified SWPPP Developer
RPM	remedial project manager
UAMD	Upper Animas Mining District
UFP	Uniform Federal Policy
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
WS	worksheet

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Introduction

CB&I Federal Services LLC (CB&I) has been contracted by the U.S. Army Corps of Engineers, Omaha District, (USACE) to perform an environmental data review and organization for the Upper Animas Mining District (UAMD) in San Juan County, Colorado, for the U.S. Environmental Protection Agency (USEPA) under Contract Number W912QR–12–D–0001. This Quality Assurance Project Plan (QAPP) has been prepared to guide the data review and assessment activities required to successfully perform this task.

The scope of the data review will include Cement Creek, the Mineral Creek area, and portions of the Upper Animas River (Figure 1) as defined in the Performance Work Statement (PWS) dated 30 January 2015, and included as Appendix A. Studies and investigations within the UAMD have been performed primarily within the last 20 to 25 years, although some relevant data may be obtained from older investigations such as a topographic survey conducted in the area in the late 1800s.

As specified in the USACE Final Quality Management Plan for EPA Region 8 Superfund Program (USACE, 2014), the contractor shall prepare a Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) for projects involving data activities. This QAPP has been prepared in USEPA QAPP format based on the requirements of the *Uniform Federal Policy (UFP) for Quality Assurance Project Plans (QAPPs): Evaluating, Assessing, and Documenting Environmental Collection and Use Programs, Part 2A: UFP-QAPP Workbook* (Intergovernmental Data Quality Task Force, 2005) and *Optimized UFP-QAPP Worksheets* (Intergovernmental Data Quality Task Force, 2012). The purpose of this QAPP is to document the environmental data review activities and to provide an evaluation of the data. Worksheets provided in this QAPP document the application of quality control (QC) and quality assurance (QA) procedures to the environmental data review and organization activities to assure that the results are of the type and quality sufficient to proceed with development of a data gap analysis and a remedial investigation/ feasibility study assessment. The success of the environmental data review process depends on the quality of the collection of environmental data and information. Because the data have been collected by a number of both governmental and private organizations over a period of 20 to 25 years, it is likely that not all of the data were collected under the same QC and QA procedures.

To effectively assess the uniformity and appropriateness of the data, we believe the quality of the data should be evaluated. This will depend on the adequacy of the QC and QA procedures proposed in these studies and investigations, and the effectiveness of their implementation. This QAPP is written to not only assess how the data review activities will be conducted, but to also evaluate and rank the data collection activities conducted by the organizations that prepared the

reports. The highest evaluation rankings (level of evidence) for scientific soundness and defensibility of the data will be for investigations and studies that were conducted in conformance with appropriate QC and QA procedures (i.e., work conducted under approved plans, using approved methods and procedures).

QAPP Worksheet #1 and #2: Title and Approval Page

1. Project Identifying Information

   a. Project Name: Review and Organization of Existing Environmental Data

   b. Site Location: Upper Animas Mining District, San Juan County, Colorado

   c. Contract Number: Base Contract W912QR-12-D-0001

2. Lead Organization Approvals

   a. CB&I Project Manager

David Cacciatore, PhD, PE, PMP	Signature	July 14, 2015 Date

   b. CB&I Quality Manager

Richard Flynn	Signature	July 16, 2015 Date

3. Federal Regulatory Agency Approval

   a. USEPA Remedial Project Manager

Paula Schmittdiel	Signature	7/23/2015 Date

4. State Regulatory Agency – Not Applicable (NA)

5. Other Stakeholders – Funding Agency Approval

   a. USACE Project Manager

Chris Fassero	FASSERO.CHRISTOPHER.AARON.1147850472 Signature	Digitally signed by FASSERO.CHRISTOPHER.AARON.1147850472 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=FASSERO.CHRISTOPHER.AARON.1147850472 Date: 2015.07.22 10:30:58 -05'00' Date

   b. USACE Quality Assurance Manager

David Ray	ANDERSON.MARC.DOUGLAS.1148220952 Signature	Digitally signed by ANDERSON.MARC.DOUGLAS.1148220952 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=ANDERSON.MARC.DOUGLAS.1148220952 Date: 2015.07.23 12:36:31 -05'00' Date

6. List plans and reports from previous investigation relevant to this project.

As provided in the PWS, the sources of data include, but are not limited to, the following:

- USGS Professional Paper 1651 – "Integrated Investigations of Environmental Effects of Historical Mining in the Animas River Watershed, San Juan County, Colorado" 2007.
- "Use Attainability Analysis" – ARSG for the Colorado Water Quality Control Commission
- ARSG Section 319 sampling and reports.
- Other USGS studies and investigations of the Animas River Watershed [also known as UAMD].
- Various USEPA sampling projects – data is housed in SCRIBE & Storet.
- Ongoing USEPA surface water sampling for the Aquatic Ecological Risk Assessment.
- USEPA data collected for Site Assessment and HRS.
- Environmental data collected by BLM.
- Data and information collected by the Colorado Department of Minerals, Reclamation, and Safety (formerly known as the Colorado Department of Mining and Geology).
- Colorado Division of Game and Fish.
- Sunnyside Gold Company water quality data reports to Colorado Water Quality Control Division.

Appendix B provides a partial list of the relevant documents to be reviewed, the primary objective of this project. This initial list, containing documents for the Cement Creek drainage, is the only list obtained to date. Document lists for sites near Mineral Creek and portions of the upper Animas River will be added as they are obtained. Documents will be obtained from sources listed in the PWS and any other sources that become known during the search. Additional documents will be added to the list as they are discovered, and a complete list of all documents reviewed will be provided in the Summary Report.

Crosswalk: UFP-QAPP Optimized Workbook to 2106-G-05 QAPP

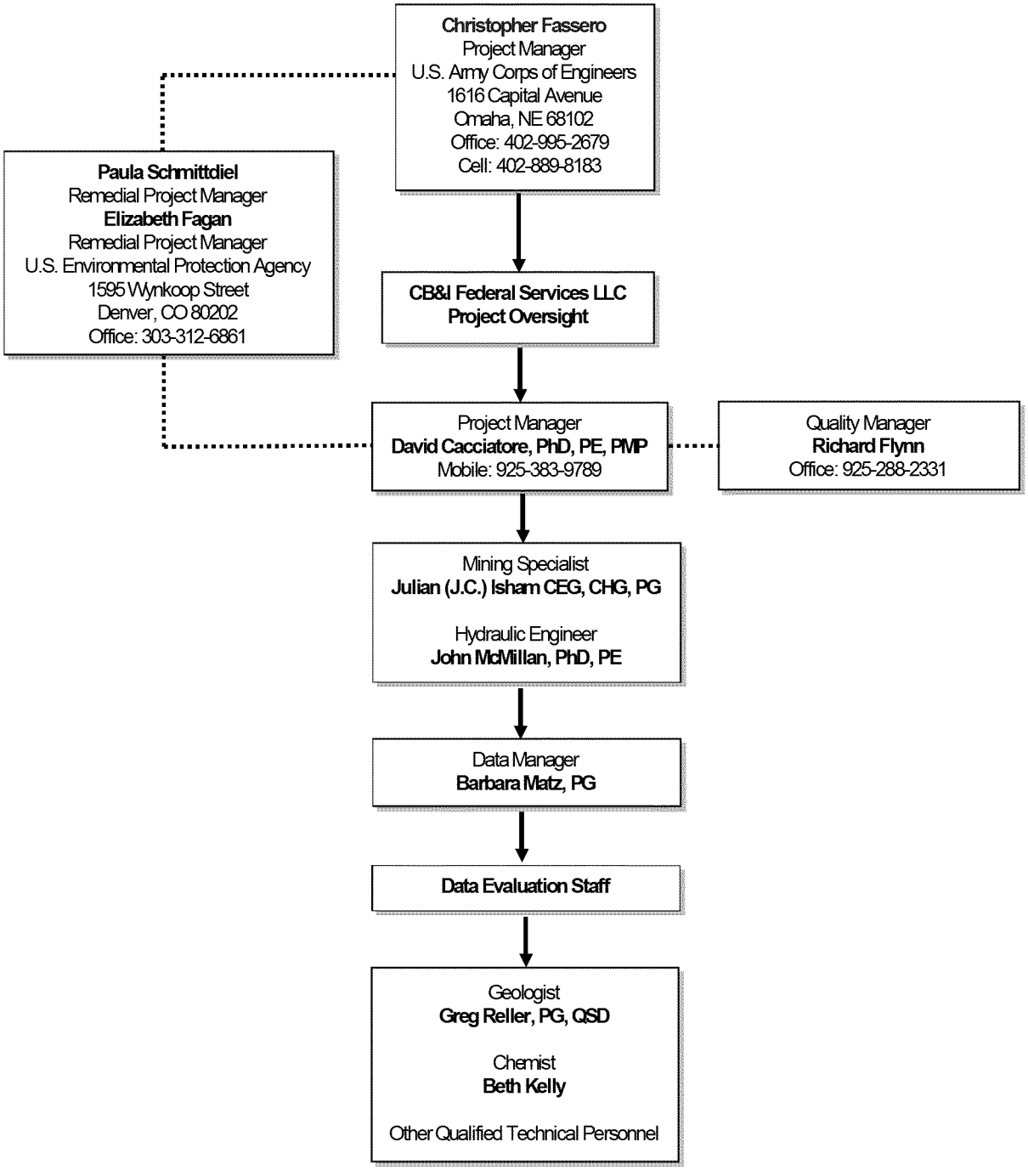
Optimized UFP-QAPP Worksheets		2106-G-05 QAPP Guidance Section	
1 & 2	Title and Approval Page	2.2.1	Title, Version, and Approval/Sign-Off
3 & 5	Project Organization and QAPP Distribution	2.2.3	Distribution List
		2.2.4	Project Organization and Schedule
4 , 7, & 8	Personnel Qualifications and Sign-off Sheet	2.2.1	Title, Version, and Approval/Sign-Off
		2.2.7	Special Training Requirements and Certification
6	Communication Pathways	2.2.4	Project Organization and Schedule
9	Project Planning Session Summary	2.2.5	Project Background, Overview, and Intended Use of Data
11	Project/Data Quality Objectives	2.2.6	Data/Project Quality Objectives and Measurement Performance Criteria
14 & 16	Project Tasks & Schedule	2.2.4	Project Organization and Schedule
29	Project Documents and Records	2.2.8	Documentation and Records Requirements

Crosswalk: Worksheets not applicable to this QAPP

Optimized UFP-QAPP Worksheets		2106-G-05 QAPP Guidance Section	
10	Conceptual Site Model	2.2.5	Project Background, Overview, and Intended Use of Data
12	Measurement Performance Criteria	2.2.6	Data/Project Quality Objectives and Measurement Performance Criteria
13	Secondary Data Uses and Limitations	Ch. 3	QAPP Elements for evaluating existing data
15	Project Action Limits and Laboratory-Specific Detection / Quantitation Limits	2.2.6	Data/Project Quality Objectives and Measurement Performance Criteria
17	Sampling Design and Rationale	2.3.1	Sample Collection Procedure, Experimental Design, and Sampling Tasks
18	Sampling Locations and Methods	2.3.1	Sample Collection Procedure , Experimental Design, and Sampling Tasks
		2.3.2	Sampling Procedures and Requirements
19 & 30	Sample Containers, Preservation, and Hold Times	2.3.2	Sampling Procedures and Requirements
20	Field QC	2.3.5	Quality Control Requirements
21	Field SOPs	2.3.2	Sampling Procedures and Requirements
22	Field Equipment Calibration, Maintenance, Testing, and Inspection	2.3.6	Instrument/Equipment Testing, Calibration and Maintenance Requirements, Supplies and Consumables
23	Analytical SOPs	2.3.4	Analytical Methods Requirements and Task Description
24	Analytical Instrument Calibration	2.3.6	Instrument/Equipment Testing, Calibration and Maintenance Requirements, Supplies and Consumables
25	Analytical Instrument and Equipment Maintenance, Testing, and Inspection	2.3.6	Instrument/Equipment Testing, Calibration and Maintenance Requirements, Supplies and Consumables
26 & 27	Sample Handling, Custody, and Disposal	2.3.3	Sample Handling, Custody Procedures, and Documentation
28	Analytical Quality Control and Corrective Action	2.3.5	Quality Control Requirements
34	Data Verification and Validation Inputs	2.5.1	Data Verification and Validation Targets and Methods
35	Data Verification Procedures	2.5.1	Data Verification and Validation Targets and Methods
36	Data Validation Procedures	2.5.1	Data Verification and Validation Targets and Methods
37	Data Usability Assessment	2.5.2	Quantitative and Qualitative Evaluations of Usability
		2.5.3	Potential Limitations on Data Interpretation
		2.5.4	Reconciliation with Project Requirements
31, 32, & 33	Assessments and Corrective Action	2.4	Assessment and Data Review
		2.5.5	Reports to Management

QAPP Worksheets #3 and #5: Project Organization and QAPP Distribution

All lines of responsibility (solid lines) and lines of communication (dotted lines) are provided. All parties shown in the organization chart below will receive copies of the QAPP.



QAPP Worksheets #4, #7, #8: Personnel Qualifications and Sign–Off Sheet

This Worksheet identifies key project personnel performing tasks identified in this QAPP, and documents that key project personnel overseeing and/or performing site work have read the applicable sections of the QAPP and will perform the tasks as described.

Project Personnel	Project Title/ Role	Education/ Experience	Specialized Training/ Certification	Signature/ Date
CB&I				
David Cacciatore, PhD, PE, PMP	Project Manager (PM). Manages and executes all services related to fulfilling the PWS; serves as single Point of Contact (POC).	19 years of experience in project management of mining projects and/or large watershed projects	Professional Engineer, Project Management Professional	
Richard Flynn	Quality Manager. Administers the QC Plan, conducts features of work inspections, and manages QC documentation and records	25 years of experience in quality oversight of investigation and remediation projects	Quality Control Management	
Julian (J.C.) Isham, CEG, CHG, PG	Mining Specialist	40 years of experience in managing monitoring, groundwater protection, feasibility studies and remedial designs at mine and landfill sites.	Certified Engineering Geologist, Certified Hydrogeologist, Professional Geologist	
John McMillan, PhD, PE	Hydraulic Engineer	30 years of environmental experience, including major remedial projects, mine site investigation, and EPA support.	Professional Civil Engineer, Professional Geotechnical Engineer	
Greg Reller, PG, QSD	Geologist	28 years of experience in managing CERCLA studies at mining sites	Professional Geologist, Qualified SWPPP Developer	

Project Personnel	Project Title/ Role	Education/ Experience	Specialized Training/ Certification	Signature/ Date
CB&I				
Beth Kelly	Chemist	30 years of analytical chemistry experience including the EPA contract laboratory program and mine and watershed sites	Juris Doctorate	
Technical Personnel	Certified professional personnel, including geologists, engineers, and chemists, who are capable of evaluating environmental data reports	At least five years of experience in planning, execution, and reporting of environmental investigation and/or remediation projects	Professional Geologist, Professional Engineer	

QAPP Worksheet #6: Communication Pathways

Communication Drivers	Organization	Name	Contact Information	Procedure
QAPP Review and Approval	USACE PM	Christopher Fassero	402-995-2679	USACE provides project oversight and support to CB&I, and will review/approve the QAPP. Any major changes to implementation of the QAPP will be approved by the USACE PM.
QAPP Review and Approval	EPA Remedial Project Manager (RPM)	Paula Schmittdiel	303-312-6861	EPA will review and approve the QAPP. Any major changes to implementation of the QAPP will be approved by the EPA PM.
Management of Project Phases	CB&I PM	David Cacciatore	925-288-2299	Tracks work progress and prepares submittals to EPA as required in the PWS. Responsible for all reporting to USACE and EPA oversight personnel. Conduit for all communications between CB&I team, USACE, and EPA.
Corrective Actions	CB&I Quality Manager	Richard Flynn	925-288-2331	QC oversight of work; determines the need for corrective actions if any; maintains the approved QAPP.

The EPA Region 8 QA Document Review Crosswalk form was utilized for the review of the UAMD QAPP (EPA, 2012). The final version of the UAMD QAPP Review Crosswalk form, documenting the review comments and accepted responses, has been included as Appendix C to this QAPP.

QAPP Worksheet #9: Project Planning Session Summary

Date of Planning Session: May 20, 2015
Location: Teleconference
Purpose: Project Kick off Meeting

Participants:

Name	Organization	Title/Role	Email/Phone
Paula Schmittdiel	EPA	RPM	schmittdiel.paula@epa.gov 303-312-6861
Christopher Fassero	USACE	PM	christopher.a.fassero@usace.army.mil 402-995-2679
Mary Darling	USACE	Program Manager	mary.n.darling@usace.army.mil 402-995-2116
David Cacciatore	CB&I	PM	david.cacciatore@cbifederalservices.com 925-383-9789
Walt Migdal	CB&I	Construction Engineering & Management	walter.migdal@cbifederalservices.com 505.262.8908
Dan Baden	CB&I	Geologist	dan.baden@cbifereralservices.com 925.288.2014
John McMillan	CB&I	Hydraulic Engineer	john.mcmillan@cbifederalservices.com 925.288.2223
Nadia Burleson	Burleson Consulting	Engineer	nb@burlesonconsulting.com 916.984.4651
Greg Reller	Burleson Consulting	Geologist	gr@burlesonconsulting.com 916.984.4651
Beth Kelly	Burleson Consulting	Chemist	bk@burlesonconsulting.com 916.984.4651

QAPP Worksheet #11: Project Data Quality Objectives

11.1 State the Problem

Step 1: Define the problem that necessitates the study. Identify the planning team members, including decision–makers, and determine resources such as budget, personnel, and schedule.

A large number of documents (over 500 documents for the Cement Creek Drainage alone) exist that record a variety of previous investigations in the area of concern. Similar document lists are anticipated for other portions of the study area. The content and quality of the various documents is not known. Professional personnel with experience in a variety of environmental investigations are needed to evaluate the documents in order to determine if potential additional investigation efforts are necessary to fully evaluate the areas of concern.

11.2 Identify the Goal of the Study

Step 2: State how data will be used in meeting objectives and solving the problem, identify study questions, define alternative outcomes.

The principal study question is: Do previous investigations provide usable site data, and what is the quality of those data? In order to determine whether the study question is answered, data source documents will first be identified. Then an initial evaluation of each document will be conducted using the Document Evaluation Checklist provided in Appendix D, which allows every data source document to be checked for a basic set of criteria. Those documents with high evaluation rankings (i.e., meeting many of the basic criteria) will then undergo additional detailed review of their data management process, as recorded on Page 2 of the Appendix D checklist. These document reviews will verify whether adequate controls were in place during each investigation to assure the quality of the data obtained. Assessment of the combined document review results may be used to indicate where data gaps exist.

In terms of process, the Document Evaluation Checklist will be converted to an electronic form which will input the information into a database or other searchable format. The format will be searchable by key fields, to aid in the generation of tables for the project reports.

11.3 Identify Information Inputs

Step 3: Identify data and information needed to answer study questions.

Each document will be reviewed by a person with appropriate qualifications to assess its contents and quality. The Document Evaluation Checklist (Appendix D) will provide a

uniform means to evaluate each document. The higher the evaluation ranking, the greater the confidence in the document's overall quality.

11.4 Define the Boundaries of the Study

Step 4: Define target population of interest; specify the spatial and temporal boundaries; determine the practical constraints on collecting data.

The scope of the data review includes data from projects conducted at Mineral Creek, Cement Creek, and portions of the upper Animas River. The study is concerned with mining impacts to soil, groundwater, and surface water in these areas. The temporal boundaries range from the onset of mining in the area (late 1800s) to the current time. The period of performance of this task is anticipated to conclude on November 7, 2015, 6 months from the task order award.

The documents may be obtained from a number of sources, as described in the PWS, and additional sources may become known in the process of obtaining these documents. It is necessary for all documents to be in electronic format, for ease of transmitting, reviewing, and storing.

11.5 Develop the Analytic Approach

Step 5: Define the parameter of interest; develop the logic for drawing conclusions from findings

A report that is based on standardized and verified investigative and quality procedures will have more bearing than one that is not. A review of documents to verify that appropriate procedures were in place will ensure that quality data are applied to the problem, and will identify any areas of missing information, i.e. "data gaps."

11.6 Specify Performance or Acceptance Criteria

Step 6: Develop acceptable criteria for existing data being considered for use.

Documents that are reviewed will be ranked based on the number of items that are checked on the Document Evaluation Checklist (Appendix D). Page 1 of the Document Evaluation Checklist allows a general evaluation of the document and Page 2 provides a weighted evaluation of various aspects and procedures that contribute to data acceptability. A higher evaluating ranking indicates that a greater number of quality procedures apply to the results. Some documents may not be reviewed if a more complete version exists (i.e., a draft version may not be reviewed if a final version is also present for review). Minor documents may not be reviewed if the document is drawn from a more comprehensive document, or the minor

document is a working product which led to a more comprehensive document. If a document is not reviewed, the checklist will report the reason.

Documents with a high initial evaluation ranking will undergo a detailed assessment of the investigation process to assure that the data are of sufficient quality to guide future project planning.

11.7 Optimize the Plan for Obtaining Data

Step 7: Review the Data Quality Objectives outputs; develop data collection design alternatives; formulate mathematical expressions for each design; select sample size that satisfies the DQOs; decide on the most resource–effective design or agreed alternative; and document details in the QAPP.

The design for evaluating previous investigations in the area of concern is optimized by applying the same Document Evaluation Checklist to all available documents. The resulting data can streamline ongoing work by awarding higher evaluation rankings to higher quality documents. Evaluation of the combined review results can also indicate areas of missing information ("data gaps").

QAPP Worksheets #14/16: Project Tasks and Schedule

14.1 Scope of Work

These worksheets describe the project activities, people responsible for their execution, and planned start and end dates.

Activity	Responsible Party	Planned Start Date	Planned Completeness Date	Deliverable	Deliverable Due Date
QAPP	CB&I	5/8/2015	7/13/2015	Report	7/13/2015
Data List and Sources Searched	CB&I / Burleson	5/8/2015	8/5/2015	Report	8/5/2015
Upper Animas Data Report	CB&I / Burleson	8/6/2015	10/8/2015	Report	10/8/2015
Data Gap Analysis and Planning Report	CB&I / Burleson	9/4/2015	10/30/2015	Report	10/30/2015

14.2 Data Recording and Transfer

Electronic copies of previous investigation reports will be catalogued, for potential further consultation through the task order period of performance. A separate Document Evaluation Checklist (Appendix D) will be produced for each document evaluated, and all completed checklists will be maintained in the project files.

Throughout the duration of the project, bi-weekly status reports will be provided in a conference call or by electronic mail if a call is not held. The status reports will be prepared by the PM and transmitted to the RPM.

The final deliverable, Data Gap Analysis and Planning Report, will be transmitted as hard copy and electronic file. Supporting documents, including all completed Document Evaluation Checklists and the index of documents reviewed, will be provided in electronic form only with the final deliverable.

QAPP Worksheet #29: Project Documents and Records

Records	Generation	Verification	Storage Location
Previous Investigation Reports	Various	NA	CB&I Project File
Document Evaluation Checklists	CB&I Technical Personnel	CB&I QC Manager	CB&I Project File

References

Environmental Protection Agency, 2012. EPA Region 8 QA Document Review Crosswalk. http://www2.epa.gov/region8/qa-forms-region-8. Update # 2 8-2012.

Intergovernmental Data Quality Task Force, 2012. *Uniform Federal Policy (UFP) for Quality Assurance Project Plans (QAPPs), Optimized UFP-QAPP Worksheets EPA, DoD and DOE.* http://www2.epa.gov/sites/production/files/documents/ufp_qapp_worksheets.pdf. March.

Intergovernmental Data Quality Task Force, 2005. *Uniform Federal Policy for Quality Assurance Project Plans: Evaluating, Assessing, and Documenting Environmental Collection and Use Programs, Part 2A: UFP–QAPP Workbook.* http://www2.epa.gov/sites/production/files/documents/ufp_qapp_v1_0305.pdf. March.

USACE, 2014. *Final Quality Management Plan for EPA Region 8 Superfund Program*, Omaha District, Revision 1, December 19.

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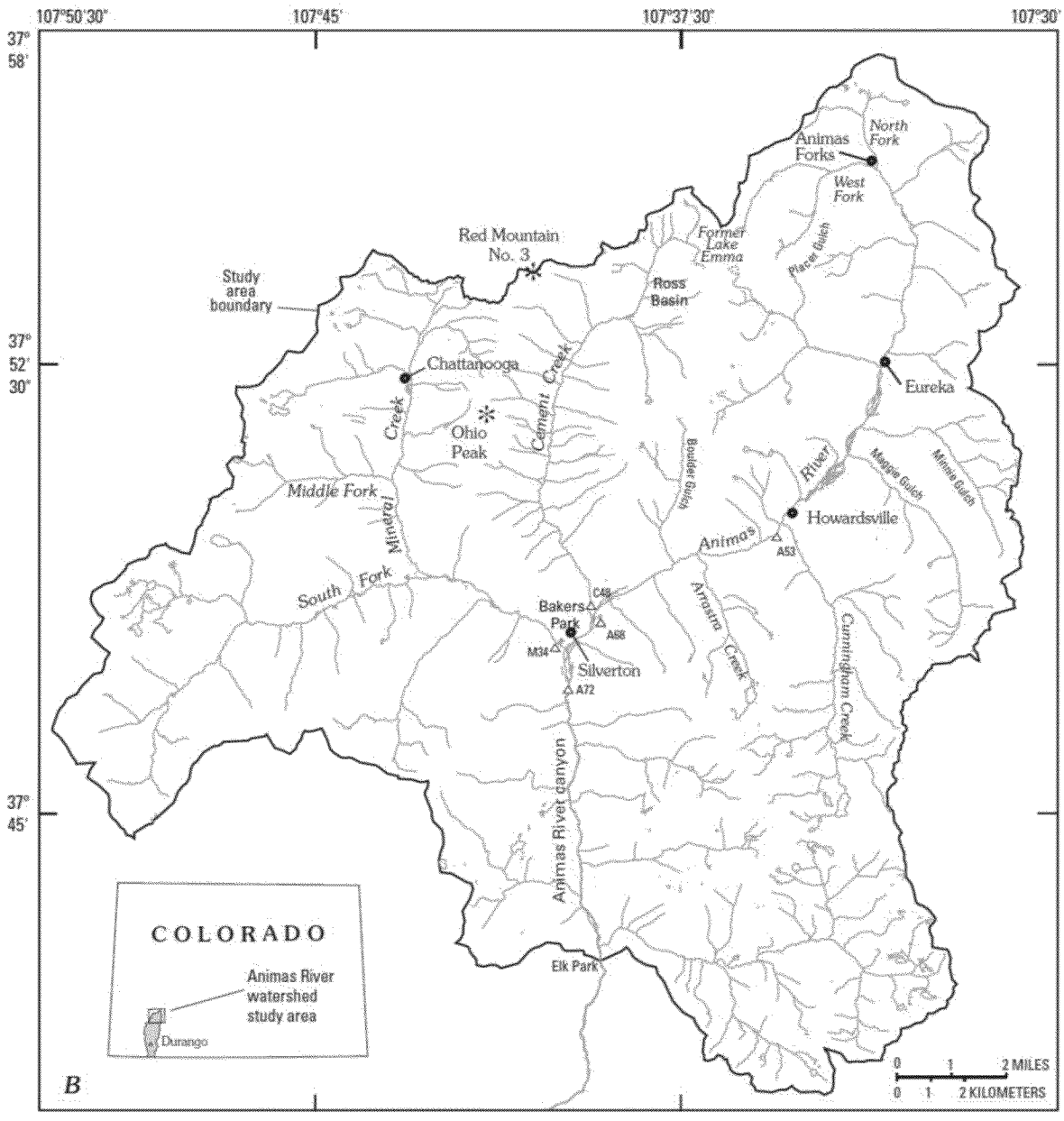
Figure

Figure 1. Upper Animas River Watershed Study Area [PWS Figure 2B]



(Note: small triangles denote streamflow gauging stations.)

Appendix A
Performance Work Statement

PERFORMANCE WORK STATEMENT

Section C.

Review and Organization of Existing Environmental Data for Upper Animas River Watershed

San Juan County, Colorado

Performance Work Statement

30 January 2015

Section 1: Introduction and Background

The US Army Corps of Engineers (USACE), Northwestern Division has an Interagency Agreement (IA) in place with the US Environmental Protection Agency, Region 8 (EPA) for technical assistance. The EPA sent USACE Omaha District funding through this IA to conduct a review and organization of existing data as a preliminary activity to the development of scoping
a remedial investigation/feasibility study (RI/FS) and other technical activities at Upper Animas River Watershed for the EPA. This Performance Work Statement (PWS) is for a Firm Fixed Price (FFP) Task Order (TO) on the Base Louisville Multiple Award Task Order Contract (MATOC) for Environmental Services.

1.1. Site Description and Location

The Upper Animas River Watershed has a history of mining activities that have impacted the water quality of the Animas River in southwestern Colorado. The headwaters of the Upper Animas River are located primarily in San Juan County, Colorado; however, a small portion of the headwaters extend into the southern portion of Ouray County and possibly Hinsdale County. The Upper Animas River flows from San Juan County into La Plata County as it winds its way towards Durango, Colorado.

1.2. Basis for Concern

The EPA is concerned with impacts from mining activities to water quality in the

Upper Animas River Watershed because the water resources are used by humans and ecological receptors. The EPA's relationship with the community is a critical concern. The community has not been convinced of the need for placing this site on the National Priority List (NPL). The
EPA is working with the community on a plan to address the contamination. Because of the sensitivity of the EPA's relationship with the local community, contractors shall avoid local contacts with the Silverton community until directed by the EPA and USACE.

1.3. History

The EPA committed in the 1990's to not pursue an NPL designation for the Upper Animas River Watershed, as long as the community based collaborative approach was making progress as demonstrated by water quality improvements in the Animas River. Despite the combined efforts of the Animas River Stakeholder Group (ARSG), the EPA, the US Bureau of Land Management (BLM), the State of Colorado, and other stakeholders to address the water quality in the Upper Animas Watershed, sampling results in the Animas River since 2004 have shown an overall decline in water quality. As a result of this water quality trend, the EPA considered several approaches and chose to prepare a targeted NPL designation for the Upper Cement Creek area. As the EPA was finalizing a package for this proposed targeted listing in
2011, Sunnyside Gold Corporation (SGC), the local government, and ARSG vigorously opposed a proposed listing, and the EPA agreed not to pursue this effort at that time.

Ongoing sampling shows that the water quality in Cement Creek and in the Animas River downstream of Silverton has not improved. In fact, there has been a decline in water quality and aquatic communities observed in the Animas River since water treatment ceased in Upper
Cement Creek around 2004. The decline has occurred in spite of numerous voluntary localized efforts to lessen metals loading to the watershed from point and non-point sources, as well as larger-scale efforts conducted by mining companies and land management agencies.

During the past two decades, there have been numerous studies and investigations of the geology, mineralogy, water quality, sediments, and aquatic environment conducted by Federal, State, and Local Governmental agencies, mining industry, and private interest groups. Data has been collected for various purposes and under differing quality assurance requirements.

Section 2: Purpose and Scope

2.1. Purpose

The purpose of this PWS is to acquire a contractor under a MATOC. The contractor shall prepare a Quality Assurance Project Plan (QAPP) to review and organize existing environmental data as the first step towards an RI/FS. This PWS also includes the actual

review and organization of the data in a database and an annotated report of the various data sets as to their data usability.

2.2. Scope of Work

Services to be performed under this task order may include, but are not limited to: development of a Quality Management Plan (QMP) and a Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) for the required environmental data review and organization. Both plans shall be developed in accordance with Office of Solid Waste and Emergency Response (OSWER) Directive 9272.0-17, June 7, 2005, implementation of the Uniform Federal Policy for Quality Assurance Project Plans. The EPA requirements for Quality Management Plans (QA/R-2) (EPA 2001) can be found at http://www.epa.gov/quality/qs- docs/r2-final.pdf. The EPA Requirements for QAPPs (QA/R-5) (EPA 2001) can be found at http://www.epa.gov/quality/qs-docs/r5-final.pdf. The EPA Quality Assurance Officer or the

Delegated Approval Official must approve the quality assurance documents in writing before measurement, including data review, activities are undertaken.

The scope of the data review and organization will include Mineral Creek, Cement Creek and the Animas River above US Geological Survey (USGS) gaging station A-72 (see Figure 1), primarily in San Juan County, and south down to Durango, Colorado. Recent water quality and aquatic data collected below USGS gaging station A-72 will also be included. Data from studies and investigations from the last 25 to 30 years is the primary focus of this scope of work. In some instances, studies or data prior to that may be relevant.

2.2.1. Task 1 – Preparation of QAPP

The contractor shall prepare a QAPP for the review and organization of existing environmental data and submit the draft QAPP along with the EPA crosswalk form for USACE and EPA review and approval.

Deliverables:

- Draft QAPP – 20 calendar days from task order award
- USACE and EPA Review – 15 calendar days from submittal of Draft QAPP
- Incorporation of Comments/Final QAPP and Crosswalk – 10 calendar days from completion of review
- USACE and EPA Approval – 5 calendar days from incorporation of comments

2.2.2. Task 2 – Data Search

The contractor shall perform a comprehensive review of environmental data collected for the Upper Animas River watershed. The sources of existing environmental data include, but are not limited to, the following:

- USGS Professional Paper 1651 – "Integrated Investigations of Environmental Effects of Historical Mining in the Animas River Watershed, San Juan County, Colorado" 2007.

- "Use Attainability Analysis" – ARSG for the Colorado Water Quality Control Commission.
- ARSG Section 319 sampling and reports.
- Other USGS studies and investigations of the Animas River Watershed.
- Various USEPA sampling projects – data is housed in SCRIBE & Storet.
- Ongoing USEPA surface water sampling for the Aquatic Ecological Risk Assessment.
- USEPA data collected for Site Assessment and HRS.
- Environmental data collected by BLM.
- Data and information collected by the Colorado Department of Minerals, Reclamation, and Safety (formerly known as the Colorado Department of Mining and Geology).
- Colorado Division of Game and Fish.
- Sunnyside Gold Company water quality data reports to Colorado Water Quality Control Division.

Deliverables:

- Draft Data List and Sources Searched – 60 calendar days from task order award
- USACE and EPA Review – 15 calendar days from submittal of Draft Data List and Sources Searched
- Final Data List and Sources Searched – 15 calendar days from completion of review

2.2.3. Task 3 – Data Organization and Gap Analysis

The contractor shall organize and prepare an annotated report on the data usability of all data sets reviewed. Because of the extensive amount of data collected by numerous organizations, an identification and review of the existing data is essential prior to attempting to scope an RI/FS to understand what data exists and what is already known and the usability of the data either for EPA decision-making, as supporting documentation, or as a "weight of evidence" criteria.

Deliverables:

- Draft Upper Animas Data Report – 30 calendar days from submittal of Final Data List and Sources Searched
- USACE and EPA Review – 20 calendar days from submittal of Draft Data Report
- Final Upper Animas Data Report – 15 calendar days from completion of review

The contractor shall prepare a data gap analysis and planning report. The data gap analysis will identify significant gaps in the available data as compared to the data requirements for an RI/FS. The planning report will identify priorities and strategies for

obtaining the additional data necessary to fill the identified data gaps.

Deliverables:

- Draft Data Gap Analysis and Planning Report – 30 calendar days from submittal of Draft Upper Animas Data Report
- USACE and EPA Review – 15 calendar days from submittal of Draft Gap Analysis and Planning Report
- Final Gap Analysis and Planning Report – 15 calendar days from completion of review

2.2.4. Task 4 – Project Management and Meetings

The contractor shall provide project management and meeting (including teleconference) support. The contractor shall prepare monthly reports, attend project meetings (either in person or by teleconference), and prepare and submit invoices to USACE for approval. The contractor shall support monthly teleconferences (1.5 hour duration) with USACE, EPA, and others as necessary.

Deliverables:

- Kick-off Meeting – 1 calendar day
- Planning Meeting for RI/FS – The contractor shall support a 1-day meeting with USACE and the EPA in Denver for discussion of preliminary waste characterization and site prioritization for an RI/FS. Contractor's Project Manager, Mining Specialist, Geologist, Hydraulic Engineer, and Chemist shall attend unless advised in advance otherwise. – 1 calendar day

Appendix B
List of Documents to be Reviewed

Doc ID	NR/AR	Doc Date*	Title	Images
1548090		07/20/05	Phase II Field Sampling Plan for Targeted Brownfields Assessment: Rose and Walsh Smelter, San Juan County, Colorado	0
1548089		04/25/06	Draft Human Health Risk Evaluation Technical Memorandum: Rose and Walsh Smelter Site, San Juan County, Colorado	0
1548088		09/08/06	Analytical Results Report: Rose and Walsh Smelter, San Juan County, Colorado	PDF 58
1547707		04/01/14	ESAT Region 8 Chain of Custody Form, U.S. Environmental Protection Agency Region 8 Superfund Program Analytical Results - Upper Animas - Water & Seds - April & May 2014, TDF: A-034, WO: #C140406, & #C140508 - w/CD	0
1547697		02/24/15	ESAT Region 8 Chain of Custody Form, U.S. Environmental Protection Agency Region 8 Superfund Program Analytical Results - Cement Creek - TOX Initial 2 - November 2012, TDF: DG-322, WO: #C121107 & #C121108 - w/CD	0
1325593		08/07/09	CD: A. Schmidt Presentation (Hydrological evaluation of plugging Dinero Tunnel to improve water quality; Analytical Parameters for Grand Mogul Mine Project Soil and Waste Rock; Site Assessment Work Plan, Mogul and Grand Mogul Mine, Silverton, CO)	PDF 1
1293396		09/22/13	ESAT Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Cement Creek - A75D Minisipper - dated August 2013; TDF: DG-383; LIMS: C130807	0
1293395		09/22/13	ESAT Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Cement Creek - A73 Minisipper - dated August 2013; TDF: DG-383; LIMS: C130806	0
1293394		09/22/13	ESAT Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Cement Creek - A72 Minisipper - dated August 2013; TDF: DG-383; LIMS: C130805	0
1293393		09/22/13	ESAT Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Cement Creek - Surface Water - dated August 2013; TDF: DG-383; LIMS: C130804	0
1293392		07/12/13	ESAT Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Cement Creek - Surface Water & Soils - dated May 2013; TDF: DG-363; LIMS: C130504	0
1293391		06/08/13	ESAT Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Cement Creek - Tox Final - dated April 2013; TDF: DG-322; LIMS: C130411	0
1293390		06/08/13	ESAT Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Cement Creek - Tox Initial - dated April 2013; TDF: DG-322; LIMS: C130410	0
1293389		02/17/13	ESAT Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Cement Creek - Tox Final - dated January 2013; TDF: DG-322; LIMS: C130101	0
1293388		12/22/12	ESAT Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Cement Creek - Tox Final 2 - dated November 2012; TDF: DG-322; LIMS: C121108	0

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Doc ID	NR/AR	Doc Date*	Title	Images
1293387		11/12/12	ESAT Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Cement Creek - Tox Initial 2 - dated November 2012; TDF: DG-322; LIMS: C121107	0
1293386		11/10/12	ESAT Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Cement Creek - Surface Water & Seds - dated October 2012; TDF: DG-322; LIMS: C121012	0
1293385		03/29/13	ESAT Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Cement Creek - Invertebrate - dated October 2012; TDF: DG-322; LIMS: C121106	0
1293384		12/28/12	ESAT Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Cement Creek - Tox Water Final - dated October 2012; TDF: DG-322; LIMS: C121019	0
1293383		12/28/12	ESAT Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Cement Creek - Tox Water Initial - dated October 2012; TDF: DG-322; LIMS: C121018	0
1293382		06/21/12	ESAT Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Cement Creek - ESAT - dated May 2012; TDF: DG-322; LIMS: C120508	0
1285608		10/31/13	ESAT Region 8 Chain of Custody Form U.S. Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Upper Animas / Cement Creek - A75D Minisipper August 2013; TDF: DG-383; Work Order #C130807; Techlaw - Includes CD	0
1285607		10/31/13	ESAT Region 8 Chain of Custody Form U.S. Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Upper Animas / Cement Creek - A73 Minisipper August 2013; TDF: DG-383; Work Order #C130806; Techlaw - Includes CD	0
1285606		10/31/13	ESAT Region 8 Chain of Custody Form U.S. Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Upper Animas / Cement Creek - A72 Minisipper August 2013; TDF: DG-383; Work Order #C130805; Techlaw - Includes CD	0
1285605		10/31/13	ESAT Region 8 Chain of Custody Form U.S. Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Upper Animas / Cement Creek - Surface Water August 2013; TDF: DG-383; Work Order #C130804; Techlaw - Includes CD	0
1285604		07/02/13	ESAT Region 8 Chain of Custody Form U.S. Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Upper Animas / Cement Creek Site - Surface Water & Soils May 2013; TDF: DG-363; Work Order #C130504; Techlaw - Includes CD	0

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Doc ID	NR/AR	Doc Date*	Title	Images
1285603		06/18/13	ESAT Region 8 Chain of Custody Form U.S. Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Upper Animas / Cement Creek Site - Tox Final April 2013; TDF: DG-322; Work Order #C130411; Techlaw - Includes CD	0
1285602		06/18/13	ESAT Region 8 Chain of Custody Form U.S. Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Upper Animas / Cement Creek Site - Tox Initial April 2013; TDF: DG-322; Work Order #C130410; Techlaw - Includes CD	0
1285601		02/19/13	ESAT Region 8 Chain of Custody Form U.S. Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Upper Animas / Cement Creek Site - Tox Final January 2013; TDF: DG-322; Work Order #C130101; Techlaw - Includes CD	0
1284000		02/17/13	ESAT Region 8 Chain of Custody Form U.S. Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Upper Animas / Cement Creek Site - Tox Initial December 2012; TDF: DG-322; Work Order #C121205; Techlaw - Includes CD	0
1283999		04/12/13	ESAT Region 8 Chain of Custody Form U.S. Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Upper Animas / Cement Creek Site - Invertebrate October 2012; TDF: DG-322; Work Order #C121106; Techlaw - Includes CD	0
1283998		12/06/12	ESAT Region 8 Chain of Custody Form U.S. Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Upper Animas / Cement Creek Site - Tox Final October 2012; TDF: DG-322; Work Order #C121019; Techlaw - Includes CD	0
1283997		12/06/12	ESAT Region 8 Chain of Custody Form U.S. Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Upper Animas / Cement Creek Site - Tox Initial October 2012; TDF: DG-322; Work Order #C121018; Techlaw - Includes CD	0
1283996		11/29/12	ESAT Region 8 Chain of Custody Form U.S. Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Upper Animas / Cement Creek - Surface Water & Seds Oct 2012; TDF: DG-322; Work Order #C121012; Techlaw - Includes CD	0
1283995		06/11/12	ESAT Region 8 Chain of Custody Form U.S. Environmental Protection Agency Region 8 Superfund Program - Analytical Data Package for Upper Animas / Cement Creek Site - ESAT May 2012; TDF: DG-322; Work Order #C120508; Techlaw - Includes CD	0

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Doc ID	NR/AR	Doc Date*	Title	Images
1266345		06/06/13	Letter re: 01/23/13 Request for Information Pursuant to Section 104(e) of CERCLA Regarding the Upper Animas Minig District w/attached Response by Washington Mining to the U.S. EPA's request for Information Pursuant to Section 104(e) of CERCLA	PDF 15
1266344		06/06/13	Letter re: 01/23/13 Request for Information Pursuant to Section 104(e) of CERCLA Regarding the Upper Animas Minig District w/attached Response by Mueller Industries, Inc. to the U.S. EPA's request for Information Pursuant to Section 104(e) of CERCLA w/CD	PDF 1182
1266343	NR	05/14/13	Cover Letter re: Confidential Documents Produced in Response to Request for Information Pursuant to Section 104(e) of CERCLA Regarding Upper Animas Mining District w/attached CD containg CBI documents	PDF 538
1266342		05/14/13	Letter re: Response to Requests for Information, Regarding: Kinross Gold Corp. is responding to the U.S. EPA's January 16, 2013 Request for Information pursuant to Section 104(e) of CERCLA, 42 U.S.C 9604(e) w/attached Certificate and CD	PDF 3319
1266341		05/15/13	Cover Letter re: Response to Requests for Information, Regarding: Copies of both Sunnyside Gold Corp. and Kinross Gold Corporation's Response to EPA's Request for Information dated 01/16/2013. (no/enclosures)	PDF 1
1266340		05/14/13	Letter re: Response to Requests for Information, Regarding: Efforts to improve water quality and habitats in the Animas River w/attached Certificate	PDF 15
1262217		11/10/10	Region 8 START 3 Contract, TDD No. 1008-0013 - Mod Request for TDD Amendment - Redacted	PDF 1
1262216		11/10/10	Email concerning Upper Animas Mining District TDD 1008-0013 Mod needed with attachment. E-mail and attachment contained claimed CBI information that has been redacted.	PDF 2
1262215		11/14/11	Redacted version of Email RE: Upper Animas new TDD	PDF 2
1262214		11/29/11	Region 8 START 3 Contract, Mod Request for TDD Amendment - Redacted	PDF 1
1262213		11/29/11	Email concerning TDD mod needed with attachment. Claimed CBI information in the attachment has been redacted.	PDF 1
1262212		10/27/10	Upper Animas Mining District TDD Mod Table - Redacted	PDF 2
1262211		10/27/10	Email concerning Upper Animas Mining District TDD Mod with attached table. Claimed CBI in attached table has been redacted.	PDF 1
1262210		11/04/10	Upper Animas Mod Cost Sheet with Task detail - Redacted	PDF 1
1262209		11/04/10	Email Re: TDD status - Upper Animas Mod with Task detail attached. Claimed CBI information in Attachment has been redacted.	PDF 2
1262208		03/04/11	Additional Tasks and Details Table Showing Specific Numbers. Claimed CBI Table has been Redacted - Cost for Unanticipated Tasks	PDF 2

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Doc ID	NR/AR	Doc Date*	Title	Images
1262207		03/04/11	Email regarding Modifications of TDD for ARR with attached table showing specific numbers. Claimed CBI in attached table has been redacted.	PDF 1
1262206		03/26/12	Redacted version of Region 8 START 3 Contract, Technical Direction Documents - Site Assessment (Task Order #0014) TDD #TO-1008-13, Contract No. EP-W-05-050 w/attached Amendment #s B, C, D and E	PDF 12
1262205		03/05/12	Redacted version of EPA START 3, Technical Direction Documents - Site Assessment (Task Order #0014) TDD #TO-1111-09, Contract No. EP-W-05-050 and Amendment #A - Increase Funding on the Project to Cover a Slight Overage	PDF 2
1262204		12/01/11	Redacted version of Handwritten notes re: the TDD status of UAMD/UCE w/attached START 3, TDDs - Site Assessment (Task Order #0014) TDD #TO-1106-05, Cotract No. EP-W-05-050,Amendment #A & Supporting Documents - marginalia	PDF 10
1262203		03/05/12	Redacted version of EPA START 3, Technical Direction Document - Site Assessment (Task Order #0014) TDD #: TO-1106-05 Amendment #B, Contract No. EP-W-05-050 - Increase Funding and LOE	PDF 2
1262202		11/18/11	Redacted Version of 2012 Upper Cement Creek HRS TDD - Region 8 START 3 Contract No. EP-W-05-050 - Technical Direction Documentation (TDD), Completion date 12/31/2012	PDF 2
1262184		06/15/11	Water Data Validated - DataValidation.accdb (Access database)	PDF 1
1262183		09/22/11	2011 Wetlands Delineation (w/multiple documents per Sabrina Forrest)	PDF 43
1262182		10/14/11	Final R8 Upper Cement Creek Narrative Summary.doc - National Priorities List (NPL), OSWER/OSRTI dated March 2012 - Historic Information	PDF 1
1262181		05/04/11	Summary Scoresheets for Computing Projected HRS Score (Quickscore). May 4, 2011. 12 pages	PDF 12
1262180		06/27/05	Photograph - Red & Bonita Ferricrete Dead Zone DSC00208 06272005.JPG	PDF 1
1262179		09/14/10	Photograph - 13 American Tunnel CC19 WQ Sampling Site 09142010	PDF 1
1262178		06/03/10	Photograph - 62 ViewFromMogulTails 06032010.JPG	PDF 1
1262165		12/06/11	Cover Letter w/attached START 3, EPA Region 8, Contract No. EP-W-05-050, TDD No. 1008-13, Revised Draft Report-Revision 1 - for August 2011 Sampling and Field Activities, Upper Animas Mining District - Appendix A-C (Signed and Approved 12/07/2011)	PDF 41
1262164		06/21/11	Quickscore Scoresheets and Narrative, June 21, 2011 - 7 pages, HRS Preliminary Score	PDF 7
1262163		07/01/11	Web Page: USGS Surface Water Data for Colorado - USGS Surface-Water Annual Statistics - Ref. 17	PDF 2

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Doc ID	NR/AR	Doc Date*	Title	Images
1262162		11/03/10	Chain of Custody Form: START EPA Contract No. EP-W-05-050, Case No. 40755 - ALS Laboratory Gourp - DATAC - Bates #000001-000008, Ref. 16	PDF 8
1262161		11/01/96	Quick Reference Fact Sheet: Using Qualified Data to Document an Observed Release and Observed Contamination - OSWER 9285.7-14FS - Bates #000001-000018, Ref. 15	PDF 18
1262160		09/01/95	Quick Reference Fact Sheet: Establishing Background Levels - Directive 9285.7-19FS - Bates #000001-000007, Ref. 14	PDF 7
1262156		03/22/11	Transmittal Cover Sheet and First Page - START 3, EPA Region 8, Contract	

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Doc ID	NR/AR	Doc Date*	Title	Images
1262142		08/01/11	Final Analytical Results Report: START 3, EPA Region 8, Contract No. EP-W-05-050, Upper Animas Mining District - Analytical Results Report (ARR) - (Signature Page Only)	PDF 1
1262141		10/01/10	Field Sampling Plans: START 3, EPA Region 8, Contract No. EP-W-05-050 - Field Sampling Plan, Upper Animas Mining District - Redline w/Changes	DOC0
1262140		10/01/10	Field Sampling Plans: START 3, EPA Region 8, Contract No. EP-W-05-050 - Field Sampling Plan, Upper Animas Mining District - Redline w/Changes, version 2	DOC0
1262139		10/01/10	Field Sampling Plans: START 3, EPA Region 8, Contract No. EP-W-05-050 - Field Sampling Plan, Upper Animas Mining District - Redline w/Changes and Comments	DOCX0
1262138		10/01/10	Field Sampling Plans: START 3, EPA Region 8, Contract No. EP-W-05-050 - Field Sampling Plan, Upper Animas Mining District - Redline w/Changes	DOCX0
1262137		10/01/10	Field Sampling Plans: START 3, EPA Region 8, Contract No. EP-W-05-050 - Field Sampling Plan, Upper Animas Mining District - Updated Version w/Redline	DOC0
1262136		10/21/10	Field Sampling Plans: Transmittal Letter - START 3, EPA Region 8, Contract No. EP-W-05-050, TDD No. 1008-13 - Field Sampling Plan, Upper Animas Mining District - (no attachment)	DOC0
1262135		08/18/11	Field Sampling Plans: Transmittal Letter w/attached START 3, EPA Region 8, Contract No. EP-W-05-050, TDD No. 1008-13 - Addendum to the Approved Field Sampling Plan-Supplemental Sampling, Upper Animas Mining District - (no signature)	DOC0
1262134		08/18/11	Field Sampling Plans: Transmittal Letter w/attached START 3, EPA Region 8, Contract No. EP-W-05-050, TDD No. 1008-13 - Addendum to the Approved Field Sampling Plan-Supplemental Sampling, Upper Animas Mining District - marginalia	PDF 4
1262133		10/01/10	Field Sampling Plans: START 3, EPA Region 8, Contract No. EP-W-05-050 - Field Sampling Plan, Upper Animas Mining District - (Signature Page w/o Signatures)	DOC0
1262132		10/01/10	Field Sampling Plans: START 3, EPA Region 8, Contract No. EP-W-05-050 - Field Sampling Plan, Upper Animas Mining District - (Updated Version)	PDF 52
1262131		10/01/10	Field Sampling Plans: START 3, EPA Region 8, Contract No. EP-W-05-050, TDD No. 1008-13 - Field Sampling Plan, Upper Animas Mining District - (Signature Page)	PDF 1
1262130		10/21/10	Field Sampling Plans: Final Transmittal Letter - START 3, EPA Region 8, Contract No. EP-W-05-050, TDD No. 1008-13 - Field Sampling Plan, Upper Animas Mining District - (no attachments)	PDF 1
1262129		10/01/10	Field Sampling Plans: Figure 3, Upper Cement Creek Details Map	PDF 1
1262128		10/01/10	Field Sampling Plans: Figure 2, Upper Cement Creek Site Details Map	PDF 1

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Doc ID	NR/AR	Doc Date*	Title	Images
1262127		10/01/10	Field Sampling Plans: START 3 EPA Regio 8, Contract No. EP-W-05-050 - Field Sampling Plan - Redline w/Comments	DOC0
1262126		10/01/10	Field Sampling Plans: START 3 EPA Regio 8, Contract No. EP-W-05-050 - Distribution List	DOC0
1262125		10/21/10	Field Sampling Plans: Cover Sheet - START 3 EPA, Contract No. EP-W-05-050, TDD No. 1008-13 - Field Sampling Plan, Upper Animas Mining District, dated October 21, 2010 (no attachments)	DOC0
1262124		01-01-1111	Field Sampling Plans: Consent for Access to Property Form - (Blank)	DOC0
1262123	NR	09/01/11	Cover Sheet w/attached Draft HRS Documentation Record	PDF 64
1262122		01-01-1111	Upper Animas Mining District - Figure 2, 15 Mile Downstream Target Distance Limits Site Map	PDF 1
1262121		08/10/11	START 3 U.S. EPA, Contract No. EP-W-05-050, TDD No. 1008-13 - Analytical Results Report for Site Reassessment - Appendix C through D, Ref. 06e, Bates No. 000449 through 000555	PDF 107
1262120		08/10/11	START 3 U.S. EPA, Contract No. EP-W-05-050, TDD No. 1008-13 - Analytical Results Report for Site Reassessment - Ref. 06d, Bates No. 000331 through 000448	PDF 118
1262119		08/10/11	START 3 U.S. EPA, Contract No. EP-W-05-050, TDD No. 1008-13 - Analytical Results Report for Site Reassessment - Ref. 06c, Bates No. 000201 through 000330	PDF 130
1262118		08/10/11	START 3 U.S. EPA, Contract No. EP-W-05-050, TDD No. 1008-13 - Analytical Results Report for Site Reassessment - Ref. 06b, Appendices A through B, Bates No. 000080 through 000200	PDF 121
1262117		08/10/11	START 3 U.S. EPA, Contract No. EP-W-05-050, TDD No. 1008-13 - Analytical Results Report for Site Reassessment - Ref. 06a, Bates No. 000001 through 000079 - (Signed)	PDF 79
1262116		01/25/11	Cover Letter: Ref 9. START 3, EPA Region 8, Contract No. EP-W-05-050, TDD No. 1005-04 - Draft Trip Report and Technical Summary - Mogul and Grand Mogul Mines (w/o attachments) - unsigned	PDF 1
1262115		01-01-1111	Preliminary Draft: Cement Creek - HRS Preliminary Score for the Cement Creek, San Juan County, Colorado	PDF 7
1262114		06/01/11	Preliminary Draft: Cement Creek HRS - Highest Background Value Selected from Five Background Locations - Dissolved Metals - ug/L (ppb)	PDF 6
1262113		03/01/12	Final: OSWER/OSRTI Upper Cement Creek - National Priorities List (NPL) - Narrative Summary	DOC0
1262112	NR	09/01/11	Reveiw Cover Sheet w/attached HRS Documentation Record	DOC0
1262111		12/06/11	Cover Letter: w/attached START 3 EPA Region 8, Contract No. EP-W-05-050, TDD No. 1008-13 - Trip Report - Revision 1, for August 2011 Sampling and Field Activities - Upper Animas Mining District - Approved 12/07/2011	PDF 41

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Doc ID	NR/AR	Doc Date*	Title	Images
1262110		12/06/11	Cover Letter: START 3 EPA Region 8, Contract No. EP-W-05-050, TDD No. 1008-13 - Trip Report - Revision 1, for August 2011 Sampling and Field Activities - Upper Animas Mining District - Approved 12/07/2011 (w/o attachments)	PDF 1
1262109		02/05/12	Cover Letter: w/attached Final START 3 EPA Region 8, Contract No. EP-W-05-050, TDD No. 1008-13 - Upper Animas Mining District / Upper Cement Creek - HRS Quickscore 3.0.3 and Scoring Narrative - Site Reassessment	PDF 12
1262108		01-01-1111	Figure 1: Upper Cement Creek Source Locations Map	PDF 1
1262107		12/26/11	Cover Letter w/attached Draft: START 3, EPA Region 8, Contract No. EP-W-05-050, TDD No. 1008-13 - Upper Animas Mining District - HRS Quickscore 3.0.3 and Scoring Narrative w/Comments - marginalia	PDF 11
1262106		12/06/11	Transmittal Letter - Draft Final: START 3, EPA Region 8, Contract No. EP-W-05-050, TDD No. 1008-13 - Trip Report, Revison 1 for August 2011 - Sampling and Field Activities, Upper Animas District (notes on yellow sticky covering letter) - Appoved 12/07/11	PDF 1
1262105		05/01/11	Draft Analytical Results Report (ARR) - Analytical Results Report for Site Reassessment - Table of Contents	PDF 64
1262104		01/10/10	Draft Analytical Results Report (ARR) - Transmittal Letter : START 3, EPA Region 8, Contract No. EP-W-05-050, TDD No. 1008-13 - Trip Report, Upper Animas Mining District - (approved by Sabrina Forrest on 01/18/2011)	PDF 1
1262103		12/15/10	Draft Analytical Results Report (ARR) - Transmittal Letter w/attached START 3, EPA Region 8, Contract No. EP-W-05-050, TDD No. 1008-13 - Trip Report, Upper Animas Mining District and Comments - marginalia	PDF 7
1262102		05/05/11	Draft Analytical Results Report (ARR) - Transmittal Letter: START 3, EPA Region 8, Contract No. EP-W-05-050, TDD No. 1008-13 - Analytical Results Report, Upper Animas Mining District (w/o attachments)	DOC0
1262101		05/01/11	Draft Analytical Results Report (ARR) - Table A: Surface Water Dissolved Metals Analytical Summary, Concentrations in Micrograms Per Liter (mcg/l) Parts Per Billion (ppb)	PDF 4
1262100		05/04/11	Draft Analytical Results Report (ARR) - Pre-Decisional Document - Summary Score Sheet for Computing Projected HRS Score - Site Reassessment Preliminary Quick Score	PDF 12
1262099		05/01/11	Draft Analytical Results Report (ARR) - Cover Sheet: Analytical Results Report for Site Reassessment, EPA Contract No. EP-W-05-050, TDD No. 1008-13 (no signature or attachments)	DOC0
1262098		01-01-1111	Draft Analytical Results Report (ARR) - Figure 2: 15 Mile Downstream Target Distance Limits Site Details Map	PDF 1

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Doc ID	NR/AR	Doc Date*	Title	Images
1262097		05/01/11	Draft Analytical Results Report (ARR) - Table A: Sediments Total Metals Analytical Summary, Concentrations in Milligrams per Kilogram (mg/kg) Parts Per Million (ppm)	PDF 4
1262096		01-01-1111	Draft Analytical Results Report (ARR) - Rev 1, HRS Preliminary Score for the Upper Animas River Site (Cement Creek) - Quickscore - marginalia	PDF 10
1262095		01-01-1111	Draft Analytical Results Report (ARR) - Upper Animas Mining District - Figure 2: Animas River from Silverton, CO to 15 Mile Downstream Target Distance Limits - Map	PDF 1
1262094		01-01-1111	Draft Analytical Results Report (ARR) - Upper Animas Mining District - Figure 1, Cement Creek & Animas River with Partial 15 Mile Downstream Target Distance Limits - Map	PDF 1
1262093		05/01/11	Analytical Results Report (ARR) - Distribution List - Upper Animas Mining District (clean copy)	DOC0
1262092		01-01-1111	Draft Analytical Results Report (ARR) - Table 5 & 6, Adit Sample & Sediment Results and Table 7, PRD Results w/Comments - marginalia	PDF 3
1262091		01-01-1111	Draft Analytical Results Report (ARR) - Table 3, Sediment Results w/Comments - marginalia	PDF 4
1262090		01-01-1111	Draft Analytical Results Report (ARR) - Table 2, Surface Water Results w/Comments - marginalia	PDF 3
1262089		05/01/11	Draft Analytical Results Report (ARR) - Table 1, Sample Locations and Rationale w/Comments - marginalia	PDF 6
1262088		04/01/11	Draft Analytical Results Report (ARR) - Table A, Data Quality Objectives Seven-Step Planning Approach - marginalia	PDF 1
1262087		05/01/11	Draft Analytical Results Report (ARR) - Distribution List, Comments - marginalia	PDF 40
1262086		05/01/11	Draft Analytical Results Report (ARR) - Distribution List, Comments 2 - marginalia	PDF 41
1262085		05/05/11	Cover Sheet: START 3, U.S. EPA Contract No. EP-W-05050 - Analytical Results Report for Site Reassessment - Upper Animas Mining District, TDD No. 1008-13 (w/o attachments)	DOC0
1262084		05/25/11	START Draft Analytical Results Report Attachment: (Figure 8) October 2010 Soil Sample Locations Map - Soil Results - Arsenic, Cadmium, Manganese & Zinc	PDF 1
1262083		05/25/11	START Draft Analytical Results Report Attachment: (Figure 7) October 2010 Sediment Sample Locations Map - Sediment Results - Arsenic, Cadmium, Manganese & Zinc	PDF 1
1262082		05/25/11	START Draft Analytical Results Report Attachment: (Figure 6) October 2010 Surface Water Sample Locations Map - Surface Water Results - Arsenic, Cadmium, Manganese & Zinc	PDF 1
1262081		05/25/11	START Draft Analytical Results Report Attachment: (Figure 5) October 2010 Soil Sample Locations Map	PDF 1

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Doc ID	NR/AR	Doc Date*	Title	Images
1261256		04/14/09	USGS Surface Water Annual Statistics for Colorado (USGS 09359020 Animas River Below Silverton and USGS 09358550 Cement Creek at Silverton; Internet publication)	PDF 2
1261255		11/19/10	Stream Classifications & Water Quality Standards (Internet publication)	PDF 2
1261254		02/25/82	Metal & Nonmetal Mine Operator's Annual Report for the Year 1981 (Gold King Project; includes Inspector's Reports dated 3/10 - 11/1924, 11/8/1923, and State of Colorado Division of Mines Department of Natural Resources Information Report dated 4/17/1981)	PDF 4
1261253		01/19/12	The Silverton Railroads, Gladstone Colorado (Internet article)	PDF 8
1261252		08/01/07	Report of Structural Geologic Investigation Red & Bonita Mine San Juan County Colorado	PDF 13
1261251		01/01/07	Generalized Geologic Map of Part of the Animas River Watershed & Vicinity, Silverton, Colorado	PDF 1
1261250		01-01-1111	Excerpts From Engineers Reports (Covering Years 1895 - 1923)	PDF 7
1261249		01-01-1111	Determination of Pre-Mining Geochemical Conditions & Paleoecology in the Animas River Watershed, Colorado; Open File Report 99-0038	PDF 16
1261248		10/09/09	Threatened & Endangered List (Internet printout)	PDF 8
1261247		08/01/11	Private Property for Wetlands (Delineation)	PDF 3
1261246		08/28/07	Summary of Reclamation Projects Table 3.1 (Updated 8/28/2007)	PDF 12
1261245		01-01-1111	(Map/Diagram)	PDF 1
1261244		04/18/09	Colorado Department of Natural Resources; Colorado Division of Wildlife; Contact Information (Internet printout)	PDF 3
1261243		07/27/04	Upper Animas Watershed - Preliminary Assessment - PASI Sites - Correspondence Upper Animas Watershed- PA/SAJ/UPP	PDF 6
1261242		03/01/95	Upper Animas Watershed Preliminary Assessment - PASI Sites - PA/SI Watershed - Reconaissance Feasibility Investigation Report - Upper Animas River Basin	PDF 12
1261241		02/01/97	Upper Animas Watershed Preliminary Assessment - PASI Sites - PA/SI Watershed - Water Quality & Sources of Megal Loading to the Upper Animas River Basin	PDF 21
1261240		01/01/07	The Effects of Acidic Mine Drainage from Historical Mines in the Animas River Watershed, San Juan, CO - What is Being Done & What Can Be Done to Improve Water Quality? (The Geological Society of America Reviews in Engineering Geology, Volume XVII 2007)	PDF 37
1261239		10/12/10	Analytical Results Upper Animas Rush Water 10/2010/DG-214 (Certificate of Analysis Laboratory Services Program; includes URS Operating Services Inc. Data Validation Reports and transmittal letter)	PDF 362
1261237		06/16/11	Fisheries, Wetland Info & Thoughts from the CSC Tech Assist Notes (Email)	PDF 2

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Doc ID	NR/AR	Doc Date*	Title	Images
1261236		10/14/09	HRS Preliminary Score for the Cement Creek Upper Animas Mining District Site Silverton, San Juan County, Colorado	PDF 12
1261235		06/08/98	Upper Animas Analytical Results Report (Appendix B: DMG Laboratory Data; Appendix C: Validated Analytical Data; Appendix D: Silverton Drinkingwater Results) (Preliminary Assessment - PASI Sites - PA/SI Watershed)	PDF 10
1261234		10/01/95	Upper Animas Watershed Preliminary Assessment - PASI Sites - PA/SI Watershed - Draft Animas Discovery Report - Upper Animas River Basin	PDF 15
1261233		04/01/98	Site Inspection Draft Analytical Results Report; Cement Creek Watershed	PDF 35
1261232		01-01-1111	(List of contribution and contaminants)	PDF 14
1261230		12/16/09	Consultation Report of the Division Engineer 09CW32, Edward & Clarice Renoux Ajax Lode Diversion Pipe (Absolute Surface Water Right; Certificate of Mailing attached)	PDF 3
1261228		04/05/11	Rare Plants in Cement Creek Fens (Email; aerial photo attached)	PDF 3
1261224		09/01/98	Cement Creek Reclamation Feasibility Report Upper Animas River Basin	PDF 188
1261223		11/01/00	Reclamation Feasibility Report Animas River Below Eureka	PDF 237
1261222		10/13/09	Data Gap Analysis Report for Targeted National Priority Listing Viability Revision 2; Upper Animas Mining District; START 3 Contract #EP-W-05-050, TDD #0812-01 (Transmittal letter attached)	PDF 41
1261221		02/01/97	Mineral Creek Feasibility Investigations Report Upper Animas River Basin	PDF 66
1261220		10/01/99	Reclamation Feasibility Report Animas River Above Eureka	PDF 151
1260720		05/25/11	START Draft Analytical Results Report Attachment: (Figures 4) Sediment Sample Locations Map	PDF 1
1260719		05/25/11	START Draft Analytical Results Report Attachment: (Figures 3) Wetlands & Surface Water Sample Locations Map	PDF 1
1260718		05/25/11	START Draft Analytical Results Report Attachment: (Figures 2) Site Details Map	PDF 1
1260717		05/25/11	START Draft Analytical Results Report Attachment: (Figures 1) Site Location Map	PDF 1
1260716		02/18/11	Data Validation Report Inorganic	PDF 404
1260715		05/25/11	START Draft Analytical Results Report Attachment: (Table 7) - RPD Results	XLSX0
1260714		05/25/11	START Draft Analytical Results Report Attachment: (Table 6) - Adit Sediment Sample Results	XLSX0
1260713		05/25/11	START Draft Analytical Results Report Attachment: (Table 5) - Adit Sediment Sample Results	XLSX0
1260712		01-01-1111	Table A: Table 5 - Adit Sediment Sample Results	XLSX0
1260711		01-01-1111	Table A: Table 4 - Soil Sampling Results	XLSX0
1260710		01-01-1111	Table A: Table 3 - Sediment Results	XLSX0

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Doc ID	NR/AR	Doc Date*	Title	Images
1260709		01-01-1111	Table A: Table 2 - Surface Water Total Metals Analytical Summary	DOC0
1260708		01-01-1111	Photolog from Trip Report	PDF 37
1260707		05/25/11	START Draft Analytical Results Report Attachments: (Tables 2-4 and Appendices A (Trip Report and Photolog - 45 pages)	DOC0
1260706		05/25/11	Attachment 1 to CSC Technical Assistance Teleconference Meeting Notes START Analytical Results Report\Draft ARR\Analytical Results Report for Site Reassessment (ARR Text plus Table 1)	DOCX0
1260705		05/04/11	START Final Analytical Results Report (ARR) - All Animas Validation	PDF 404
1260704		01/06/11	Water Data - Unvalidated - C101101 FINAL SCRIBE 12 Nov 10 1341.xls	XLS0
1260703		04/15/11	Sediment Data Validated - MH35G5-with qualifiers.xls	XLS0
1260702		04/15/11	Sediment Data Validated - MH35H7-with qualifiers.xls	XLS0
1260701		06/15/11	Sediment Data Validated - MH35E5-with qualifiers.xls	XLS0
1260700		06/15/11	Sediment Data Validated - MH36L0-with qualifiers.xls	XLS0
1260699		11/18/11	Sediment PCB - Unvalidated H35G5.xls	XLS0
1260698		11/18/11	Sediment PCB - Unvalidated H35H7.xls	XLS0
1260697		11/18/11	Sediment PCB - Unvalidated H36L0.xls	XLS0
1260696		11/30/10	Sediment PCB - Unvalidated H35E5.xls	XLS0
1260695		04/13/11	Sediment Data- Unvalidated MH35E5.xls	XLS0
1260694		04/13/11	Sediment Data- Unvalidated MH35G5.xls	XLS0
1260693		04/14/11	Sediment Data- Unvalidated MH35H7.xls	XLS0
1260692		04/14/11	Sediment Data - Unvalidated Sample Delivery Group MH36L0.xls	XLS0
1260662		07/14/12	Technical Memorandum - Mass Loading Analysis of the Upper Animas River at Water Quality Station A72	PDF 41
1259913		10/21/10	START 3, EPA Region 8, Contract No. EP-W-05-050, TDD No. 1008-13, Field Sampling Plan, Upper Animas Mining District, San Juan County, Colorado	PDF 54
1259912		08/10/11	START 3, EPA Region 8, Contract No. EP-W-05-050, TDD No. 1008-13, Analytical Results Report for Site Assesssment - Appendices A through D, Upper Animas Mining District, Silverton, San Juan County, Colorado	PDF 464
1259910		08/18/11	START 3, EPA Region 8, Contract No. EP-W-05-050, TDD No. 1008-13, Addendum to the approved Field Sampling Plan-Supplemental Sampling Upper Animas Mining District, Silverton, San Juan County, Colorado	PDF 4
1259909		01-01-1111	Map of Gladstone Area	PDF 2
1259908		01/01/11	Upper Animas Mining District San Juan County, Silverton, Colorado - October 2010 Sample Locations Map, UOS - START 3, TDD No. 0812-01	PDF 1

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Doc ID	NR/AR	Doc Date*	Title	Images
1259907		08/01/11	Upper Animas Mining District San Juan County, Silverton, Colorado - Figure 4: October 2010 Surface Water Sample Locations & Elevated Metal Concentrations Map, UOS - START 3, TDD No. 1008-13	PDF 1
1259893		07/16/12	Evaluation of Certain Selected Conventional Treatment Methodologies - CEMENT CREEK	PDF 80
1259892		07/14/12	Technical Memorandum - Mass Loading Analysis of the Upper Animas River at Water Quality Station A72: Contribution of Sub-Basin Drainages to Total Loading (and Concentrations)	PDF 41
1259874		01/01/12	START 3 - Cement Creek Final Report: Wetland and Sensitive Habitat Finding Report, January 2012 w/CD	PDF 196
1259869		08/01/11	(2) Tentatively Identified Wetland Location Maps - Figure 2, Gladstone to Grand Mogul and Figure 3, Gladstone to Grassy Gulch	PDF 3
1259833		09/20/12	Final Revision 1 , Sampling and Analysis Plan/Quality Assurance Project Plan - 2012 Sampling Events	PDF 150
1259793		02/25/93	Relationship of Mine Workings to Surface Water Basin - Figure 2, Map and Schematic of Differing Fracture Permeability with Depth - Figure 6, Map dated 10/23/91	PDF 2
1259792		01-01-1111	Prioritization of Abandoned Mines in the Animas Watershed, Southwestern Colorado	PDF 11
1259789		01-01-1111	Flow Chart	PDF 1
1259785		02/12/13	Upper Animas Mining District Map, October 2012 Sampling Event - Map of the Animas River Canyon Area	PDF 2
1259784		01/24/13	Upper Animas Mining District Maps (2) October 2012 Sampling Event - Maps of the Upper Animas River & Cement Creek and Upper Cement Creek Area	PDF 3
1259783		07/06/12	Upper Animas Mining District Area Overview Maps (2) May 2012 Sampling Event - Maps of the Upper Animas River & Cement Creek and Upper Cement Creek Area	PDF 3
1259782		07/01/12	Final Screening-Level Ecological Risk Assessment Work Plan - Cement Creek and Animas River Mining District	PDF 39
1259781		01/03/13	Letter re: CDPHE Comments on the November 2012 Draft Screening Level Ecological Risk Assessment for Upper Animas Mining District, San Juan County, Colorado	PDF 3
1259780		07/01/12	Evaluation of Certain Selected Conventional Treatment Methodologies - Cement Creek	PDF 5
1259779		01/11/13	Letter re: Draft Screening-Level Ecological Risk Assessment (SLERA) - Sunnyside Comments on SLERA	PDF 3
1250218		12/03/10	ESAT Region 8 Chain of Custody Form, U.S. Environmental Protection Agency Region 8 Superfund Program Analytical Results - Upper Animas - Waters - October 2010, TDF: DG-216 , LIMS: C101101	0

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Doc ID	NR/AR	Doc Date*	Title	Images
1250208		10/15/10	ESAT Region 8 Chain of Custody Form, U.S. Environmental Protection Agency Region 8 Superfund Program Analytical Results - Upper Animas - Rush Water - October 2010, TDF: DG-214, LIMS: C101004	0
1250207		10/15/10	ESAT Region 8 Chain of Custody Form, U.S. Environmental Protection Agency Region 8 Superfund Program Analytical Results - Upper Animas - Rush SED - October 2010, TDF: DG-214, LIMS: C101003	0
1249965		09/25/12	Complete Sample Delivery Group File (CSF) date CSF received 12/13/2010 - Upper Animas Mining District - Chain of Custody Case #40755, SDG #MH36L0, Lab Name: ALS Laboratory Group - Contract Laboratory Program (CLP), Data Package	0
1249964		09/25/12	Complete Sample Delivery Group File (CSF) date CSF received 12/13/2010 - Upper Animas Mining District - Chain of Custody Case #40755, SDG #MH35H7, Lab Name: ALS Laboratory Group - Contract Laboratory Program (CLP), Data Package	0
1249963		09/25/12	Complete Sample Delivery Group File (CSF) date CSF received 12/08/2010 - Upper Animas Mining District - Chain of Custody Case #40755, SDG #MH35G5, Lab Name: ALS Laboratory Group - Contract Laboratory Program (CLP), Data Package	0
1249962		09/25/12	Complete Sample Delivery Group File (CSF) date CSF received 12/16/2010 - Upper Animas Mining District - Chain of Custody Case #40755, SDG #MH35E5, Lab Name: ALS Laboratory Group - Contract Laboratory Program (CLP), Data Package	0
1249961		09/25/12	Complete Sample Delivery Group File (CSF) date CSF received 11/16/2010 - Upper Animas Mining District - Chain of Custody Case #40755, SDG #H36L0, Lab Name: ALS Laboratory Group - Contract Laboratory Program (CLP), Data Package	0
1249960		09/25/12	Complete Sample Delivery Group File (CSF) date CSF received 11/16/2010 - Upper Animas Mining District - Chain of Custody Case #40755, SDG #H35H7, Lab Name: ALS Laboratory Group - Contract Laboratory Program (CLP), Data Package	0
1249959		09/25/12	Complete Sample Delivery Group File (CSF) date CSF received 11/16/2010 - Upper Animas Mining District - Chain of Custody Case #40755, SDG #H35G5, Lab Name: ALS Laboratory Group - Contract Laboratory Program (CLP), Data Package	0
1249958		09/25/12	Complete Sample Delivery Group File (CSF) date CSF received 11/16/2010 - Upper Animas Mining District - Chain of Custody Case #40755, SDG #H35E5, Lab Name: ALS Laboratory Group - Contract Laboratory Program (CLP), Data Package	0
1249558		11/01/12	DRAFT Screening-Level Ecological Risk Assessment	PDF 125
1225542		03/21/12	Cover letter: w/attached START 3, EPA Region 8, Contract No. EP-W-05-050, TDD No. 1005-04, Technical Memo - Final, Removal Site Assessment for Mogul and Grand Mogul Mine Dumps	PDF 50

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Doc ID	NR/AR	Doc Date*	Title	Images
1225525		03/22/11	Cover letter w/attached START 3, EPA Region 8, Contract No. EP-W-05-050, TDD No. 1008-01, Field Activities Report, Red and Bonita Mine, Silverton, San Juan County	PDF 154
1225524		02/22/11	Cover letter w/attached START 3, EPA Region 8, Contract No. EP-W-05-050, TDD No. 1008-01, Field Sampling Plan, Red and Bonita Mine, Silverton, San Juan County	PDF 23
1225523		01/20/12	Field Activity Report Mine Adit Entry	PDF 65
1209861	NR	12/09/98	CDPHE Quarterly Reports / FY 1998 w/attached comments and reviews from EPA	PDF 33
1209857	NR	10/12/95	Lertter re: Year End Report - Preliminary Assessment / Site Inspection Program FY 1994 -1995 w/attached quarterly reports	PDF 12
1209856	NR	11/12/96	Lertter re: Year End Report - Preliminary Assessment / Site Inspection Program FY 1996 w/attached quarterly reports	PDF 23
1209855	NR	10/16/97	EPA Response to CDPHE Quarterly Report 1997 w/attached report	PDF 37
1207605		09/29/11	Complete Sample Delivery Group File (CSF) date CSF received 09/08/2011 - Chain of Custody, Upper Animas Mining District - Case #41730, SDG #MH30H7, Lab Name: Sentinel, Inc. - Contract Laboratory Program (CLP), Data Package	0
1207584		05/26/09	Folder Contains 'Sampling & Analytical Data Files, EPA Golden Lab Data Package: Animas River 2009, Lab Service Request (LSR) R8090063 (Amended report) Includes 07/22/09 signed transmittal letter, folder dated 05/26/09)	0
1207583		10/22/09	Folder Contains 'Sampling & Analytical Data Files, EPA Golden Lab Data Package: Animas River 2009, Lab Service Request (LSR) R8090063 (Includes 10/22/09 signed transmittal letter)	0
1207582		06/19/09	Folder Contains 'Sampling & Analytical Data Files, EPA Golden Lab Data Package: Animas River 2009, Lab Service Request (LSR) R8090066 (Includes 07/17/09 signed transmittal letter, folder dated 06/19/09)	0
1207581		10/23/09	Folder Contains 'Sampling & Analytical Data Files, EPA Golden Lab Data Package: Animas River 2009, Lab Service Request (LSR) R8090066 (Includes 10/23/09 signed transmittal letter)	0
1207580		07/20/09	Folder Contains 'Sampling & Analytical Data Files, EPA Golden Lab Data Package: Animas River 2009, Lab Service Request (LSR) R8090067 (Includes 08/19/09 signed transmittal letter, folder dated 07/20/09)	0
1207579		10/26/09	Folder Contains 'Sampling & Analytical Data Files, EPA Golden Lab Data Package: Animas River 2009, Lab Service Request (LSR) R8090067 (Includes 10/26/09 signed transmittal letter)	0
1207578		08/21/09	Folder Contains 'Sampling & Analytical Data Files, EPA Golden Lab Data Package: Animas River 2009, Lab Service Request (LSR) R8090068	0

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Doc ID	NR/AR	Doc Date*	Title	Images
1207577		10/26/09	Folder Contains 'Sampling & Analytical Data Files, EPA Golden Lab Data Package: Animas River 2009, Lab Service Request (LSR) R8090068 (Includes 10/26/09 signed transmittal letter)	0
1207576		09/28/09	Folder Contains 'Sampling & Analytical Data Files, EPA Golden Lab Data Package: Animas River 2009, Lab Service Request (LSR) R8090069	0
1207575		02/01/10	Folder Contains 'Sampling & Analytical Data Files, EPA Golden Lab Data Package: Animas River 2009, Lab Service Request (LSR) R8090069 (Includes 02/01/10 signed transmittal letter)	0
1207568		11/20/09	Folder Contains 'Sampling & Analytical Data Files, EPA Golden Lab Data Package: Animas River 2009, Lab Service Request (LSR) R8090070 (Includes 02/05/10 signed transmittal letter, folder dated 11/20/09)	0
1194024		12/31/10	Animas River 2009 - 2010 Data Summary	XLSX0
1194023		04/08/09	Basline Sampling and Analysis Plan for Upper Cement Creek Water Quality Characterization, dated April 8, 2009	PDF 53
1193920		03/10/11	Map - Figure 5. Upper Cement Creek Sample Locations Mogul Area - San Juan County, Colorado	PDF 1
1193919		03/10/11	Map - Figure 4. Upper Cement Creek Sample Locations San Juan County, Colorado	PDF 1
1193916		01-01-1111	Summary of Sampling data from 2005 to 2006 for Mine Discharges that impact Cement Creek w/attached Appendix B table	PDF 2
1193915		01-01-1111	Map - Figure 1, Upper Cement Creek DMG and WQCD Water Quality Sampling Sites	PDF 1
1189842		01-01-1111	RCTS Demo Photos	PDF 46
1189841		06/01/05	Upper Cement Sites Sampling Photo Logs June 2005	PDF 38
1186000		09/01/05	Herbert Placer Reclamation Sampling Photo Logs September 2005	PDF 5
1185999		09/01/10	Animas River Sampling Photo Logs September 2010	PDF 66
1185998		09/01/09	Animas River Sampling Photo Logs September 2009	PDF 38
1185997		11/01/10	Animas River Sampling Photo Logs November 2010	PDF 53
1185996		11/01/09	Animas River Sampling Photo Logs November 2009	PDF 57
1185995		05/01/09	Animas River Sampling Photo Logs May 2009	PDF 50
1185994		03/01/10	Animas River Sampling Photo Logs March 2010	PDF 43
1185993		06/01/10	Animas River Sampling Photo Logs June 2010	PDF 88
1185992		06/01/09	Animas River Sampling Photo Logs June 2009	PDF 46
1185991		07/01/10	Animas River Sampling Photo Logs July 2010	PDF 92
1185990		07/01/09	Animas River Sampling Photo Logs July 2009	PDF 64
1185989		02/01/10	Animas River Sampling Photo Logs February 2010	PDF 43
1185988		08/01/09	Animas River Sampling Photo Logs August 2009	PDF 40
1185987		04/01/10	Animas River Sampling Photo Logs April 2010	PDF 35
1185974		11/12/09	Silverton Area - Lead, Manganese, and Zinc Results (Dissolved Metals) San Juan County, Colorado Figure 6	PDF 1

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Doc ID	NR/AR	Doc Date*	Title	Images
1185973		11/12/09	Silverton Area - pH and Flow Results San Juan County, Colorado Figure 8	PDF 1
1185972		11/12/09	Silverton Area - Aluminum and Iron Results (Total Recoverable Metals) Cadmium and Copper (Dissolved Metals) San Juan County, Colorado Figure 7	PDF 1
1185971		03/16/09	Upper Animas Basin and Cement Creek Study Area San Juan County, Colorado Figure 1	PDF 1
1185970		06/02/10	Upper Cement Creek Sample Locations Mogul Area San Juan County, Colorado	PDF 1
1185969		06/02/10	Upper Cement Creek Sample Locations San Juan County, Colorado	PDF 1
1185968		06/02/10	Overview of Sample Locations Animas River, Mineral Creek, and Cement Creek San Juan County, Colorado Figure 2	PDF 1
1185967		03/09/09	Upper Animas Sample Locations Figure 3	PDF 1
1185966		11/12/09	Upper Cement Creek - Zinc Results (Dissolved Metals) San Juan County, Colorado Figure 4	PDF 1
1185965		11/12/09	Upper Cement Creek - Lead and Manganese Results (Dissolved Metals) San Juan County, Colorado Figure 3	PDF 1
1185964		11/12/09	Upper Cement Creek - pH and Flow Results San Juan County, Colorado Figure 5	PDF 1
1185963		11/12/09	Upper Cement Creek - Cadmium and Copper Results (Dissolved Metals) San Juan County, Colorado Figure 2	PDF 1
1185962		11/12/09	Upper Cement Creek - Aluminum and Iron Results (Total Recoverable Metals) San Juan County, Colorado Figure 1	PDF 1
1185835		01/25/11	Mogul Trip Report	PDF 106
1185800		04/27/09	Sixth Semi-Annual Report for March 15, 2009 Section 319 / Nonpoint Source Project	DOC0
1185799		10/07/08	Fifth Semi-Annual Report for September 15, 2008 Section 319 / Nonpoint Source Project	DOC0
1185797		09/30/98	Nonpoint Source Project Summary Generated from Grants Reporting and Tracking System	PDF 2
1185796		02/01/97	Nonpoint Source Project Summary Generated from Grants Reporting and Tracking System	PDF 2
1185795		09/15/06	Second Semi-Annual Report Section 319 / Nonpoint Source Project Anglo Saxon / Porcupine Mine Assessment and Characterization	DOC0
1185794		01-01-1111	Project Summary Sheet "Anglo-Saxon / Porcupine Assessment and Characterization	DOC0
1185793		01-01-1111	The Animas Watershed Plan Plans for Remediation of Historical Mining Sites in the Upper Animas River Basin	DOC0
1185792		01/01/99	Excel Spreadsheet Grant Numbers Table for Fiscal Year 1995, 1996, 1999, 2002, and 2005	XLSX0

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Doc ID	NR/AR	Doc Date*	Title	Images
1185791		05/09/07	Third Semi-Annual Report Section 319 / Nonpoint Source Project "Anglo Saxon / Porcupine Mine Assessment and Characterization Reporting Period September 16, 2006 to March 15, 2007	DOC0
1185790		01/01/06	Nonpoint Source Project Summary from Grant Reporting and Tracking System Grant #: 99818605	PDF 2
1185789		08/29/09	Technical Memorandum for the Anglo-Saxon Mine Adit Openings for bulkhead Evaluation Revision 1	PDF 20
1185788		10/19/07	Fourth Semi-Annual Report Section 319 / Nonpoint Source Project "Anglo Saxon / Porcupine Mine Assessment and Characterization"	DOC0
1185787		09/29/09	Section 319 Nonpoint Source Pollution Control Program Watershed Project Final Report Anglo Saxon / Porcupine Mine Assessment and Characterization	DOC0
1185786		11/01/06	Removal Preliminary Assessment Report Grand Mogul Mine Silverton, CO	DOC0
1185785		09/12/07	Proposed Remediation Strategy for Consideration in the Ross Basin - Grand Mogul Area as Based on August - September 2007 Field Work	DOC0
1185782		01/01/10	Grand Mogul and Gold King Miscellaneous Photos	PDF 17
1185781		11/01/10	Figure No. 2 Mogul Pile 1 and Grand Mogul Pile 1, 2, 3 Field Parameters TDD:0710-07	PDF 2
1185780		03/31/99	Memorandum Regarding NPDES Permits w/Attached Water Compliance Inspection Report & Photos CO-0000426 CO-0027529 CO-0036056 CO-0044768	PDF 30
1185779		11/02/10	Chain of Custody Form Project Name Animas River / Cement Creek LSR#: 1011-001 (EPA R8 Lab & Paragon Analytical)	PDF 7
1185778		09/15/10	Chain of Custody Form Project Name Animas River / Cement Creek LSR#: 1009-001 (EPA R8 Lab & Paragon Analytical)	PDF 7
1185777		09/28/10	Chain of Custody Form Project Name Animas River / Cement Creek LSR#: 1009-034 (EPA R8 Lab & Paragon Analytical)	PDF 8
1185776		07/13/10	Chain of Custody Form Project Name Animas River / Cement Creek LSR#: 1007-01 (EPA R8 Lab & Paragon Analytical)	PDF 8
1185775		06/02/10	Chain of Custody Form Project Name Animas River / Cement Creek LSR#: 1006-01 (EPA R8 Lab & Paragon Analytical)	PDF 5
1185774		04/13/10	Chain of Custody Form Project Name Animas River / Cement Creek LSR#: Not Included (EPA R8 Lab & Paragon Analytical)	PDF 2
1185773		04/13/10	Chain of Custody Form Project Name Animas River / Cement Creek LSR#: 1004001 (EPA R8 Lab & Paragon Analytical)	PDF 6
1185772		03/17/10	Chain of Custody Form Project Name Animas River / Cement Creek LSR#: Not Included (EPA R8 Lab & Paragon Analytical)	PDF 2
1185771		03/17/10	Chain of Custody Form Project Name Animas River / Cement Creek LSR#: 1003-001Analysis Acidity, TSS, & TDS (EPA R8 Lab & Paragon Analytical)	PDF 4

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Doc ID	NR/AR	Doc Date*	Title	Images
1185770		02/17/10	Chain of Custody Form Project Name Animas River / Cement Creek LSR#: 1002-001Analysis Acidity, TSS, & TDS (EPA R8 Lab & Paragon Analytical)	PDF 4
1185769		11/19/09	Chain of Custody Form Analysis Acidity, TSS, & TDS (EPA R8 Lab & Paragon Analytical)	PDF 2
1185768		11/20/09	Chain of Custody Form LSR No. / Project Name Animas River R8090070 (EPA R8 Lab & Paragon Analytical)	PDF 4
1185767		09/28/09	Chain of Custody Form LSR No. / Project Name Animas River R8090069 (EPA R8 Lab & Paragon Analytical)	PDF 10
1185766		09/24/09	Chain of Custody Form Analysis Acidity, TSS, & TDS (EPA R8 Lab & Paragon Analytical)	PDF 3
1185765		08/20/09	Chain of Custody Form Analysis Acidity, TSS, & TDS (EPA R8 Lab & Paragon Analytical)	PDF 2
1185764		08/21/09	Chain of Custody Form LSR No. / Project Name Animas River Cement Creek Analysis DOC, TOC, Anions, Dissolved Metals, and Total Metals (EPA R8 Lab & Paragon Analytical)	PDF 8
1185763		07/16/09	Analysis Acidity, TSS, & TDS (EPA R8 Lab & Paragon Analytical)	PDF 2
1185762		07/20/09	Chain of Custody Form Animas River R8090067 (EPA R8 Lab & Paragon Analytical)	PDF 7
1185761		05/21/09	Chain of Custody Form Acidity, TSS, & TDS Analysis (EPA R8 Lab & Paragon Analytical)	PDF 1
1185760		05/26/09	Chain of Custody Form LSR No. / Project Name: Animas River R8090063 (EPA R8 Lab & Paragon Analytical)	PDF 5
1185759		08/13/10	START 3 Field Sampling Plan Mogul and Grand Mogul Mines TDD No. 1005-04 Contract#: EP-W-05-050	PDF 30
1185758		06/19/09	Discharge Table for 3" Parshall Flume Document: PAR3-D-T Figure 3	PDF 2
1185757		01/14/04	Discharge Table for 3" Parshall Flume Document: PAR3-D-T	PDF 2
1185756		01-01-1111	Contacts for Silverton Monthly Sampling w/Attached Travel Itinerary. w/Marginalia	PDF 3
1185755		11/12/09	Figure 4 & 5 Upper Cement Creek Sample Locations Mogul Area San Juan County, Colorado Area of Interest	PDF 3
1185736		01-01-1111	Oversized American Tunnel Portal Topographic Map #0-13 Exhibit C2	PDF 1
1185705		01-01-1111	Sabrina Forrest Field Working Notes	PDF 278
1185704		01-01-1111	Draft Data/Charts from EPA Bill Schroeder Evaluation of EPA/BLM/ARSG Water Quality Data Collected During 6 Months in 2009 w/Attached River Sampling Locations and Marginalia	PDF 40
1185703		11/06/08	Email Regarding: Viability of Targeted Listing in Upper Animas Watershed w/Attached Metal Load Tables	PDF 9
1185702		01-01-1111	START3 file Contents (File for Gladstone)	PDF 4
1185701		12/13/10	Email Regarding EPA/BLM Collected Water Quality Data (Site Links)	PDF 5
1185700		12/16/10	Email Regarding Excel Spreasheets of EPA/BLM Collected Water Quality Data (Larry Perino's Comments)	PDF 6

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Doc ID	NR/AR	Doc Date*	Title	Images
1185699		01-01-1111	ASRG Bibliography of ARSG Reports and Videos in the Silverton Library	PDF 4
1185698		01-01-1111	Miscellaneous Handwritten Notes AMD Field Testing Facility and ARSG Document	PDF 1
1185697		09/14/10	Email to EPA Staff Regarding Trip to Silverton and Area Issues Regarding Listing of Possible Solution	PDF 5
1185497		01-01-1111	William Schroeder Field Notebooks, Animas River, July 1998-September 2010 "Full"	PDF 89
1185496		05/01/97	Final Report: Berkeley Pit Innovative Tech Proj: H.P.T. Research, Inc Demo: Mine Waste Technology Program Activity IV, Project 7 w/attached CD (Water treatment information from ORD, BLM, CIWT-RCTS, and other systems)	PDF 116
1185492		01-01-1111	Canon City Company Information including handwritten notes and e-mail date 9-4-2009: STW information for EPA and ARSG (Water treatment information from ORD, BLM, CIWT-RCTS, and other systems)	PDF 4
1185491		05/01/04	Annual Report of the Acid Drainage Technology Initiative - Metal Mining Sector (ADTI-MMS) For Years 2001, 2002 & 2003 (Water treatment information from ORD, BLM, CIWT-RCTS, and other systems)	PDF 25
1185490		01-01-1111	Report: Hydroxide Precipitation Systems w/attached Resources (Water treatment information from ORD, BLM, CIWT-RCTS, and other systems)	PDF 3
1185446		08/01/08	Draft Quality Assurance Project Plan, Applied Research Project, Gladstone Rotating Cylinder Treatment System, Cement Creek and Supper Gold King Mine, Gladstone, San Juan County, CO (Water treatment information from ORD, BLM, CIWT-RCTS, and other systems)	PDF 53
1185445		01-01-1111	Review Comments Gladstone Draft SAP and QAPP; Refer 1703 (360) N; US DOI, BLM, National Operations Center (Water treatment information from ORD, BLM, CIWT-RCTS, and other systems)	PDF 2
1185444		08/06/08	Comments on QAPP and SAPP for Gladstone Demonstrationl w/attachments (Water treatment information from ORD, BLM, CIWT-RCTS, and other systems)	PDF 8
1185436		08/29/08	Dissolved Metals samples report (Water treatment information from ORD, BLM, CIWT-RCTS, and other systems)	PDF 9
1185435		01-01-1111	Analyte samples report (Water treatment information from ORD, BLM, CIWT-RCTS, and other systems)	PDF 11
1185411		01-01-1111	Table 11.1: Metal loads from selected adits in the Upper Animas Basin (Water treatment information from ORD, BLM, CIWT-RCTS, and other systems)	PDF 2
1185410		01-01-1111	Table 7: July 2005 Dissolved Metal Loading Calculations July 4 adits w/attachments (Water treatment information from ORD, BLM, CIWT-RCTS, and other systems)	PDF 21

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Doc ID	NR/AR	Doc Date*	Title	Images
1185373		01-01-1111	Table X. Mean Influent, Effluent and Percent Removal of S2 Samples w/marginalia	PDF 2
1185353		10/19/07	WTER Addendum Report Comments received w/marginalia and attached handwritten notes	PDF 4
1185349		02/11/92	Oversized Preminary Characterization of the Hydrology and Water Chemistry of the Sunnyside Mine and Vicinity w/attached Water Data Summaries	PDF 11
1185348		01-01-1111	Mogul Samples w/Sample # and Reading #	PDF 6
1185347		11/30/94	Memo re: Draft Reports Relating to Proposed Sunnyside Mine Closure	PDF 7
1185346		01-01-1111	SGC Scenarios	PDF 1
1185330		05/03/10	Information download of Geochemistry: Exploration, Environment, and Analysis - The use of fluoride as a natural tracer in water and the relationship to geological features: from the Animas River Watershed, San Juan Mtns, Silverton, CO w/marginalia	PDF 15
1185329		11/01/06	Removal Preliminary Assessment Report, Grand Mogul Mine, Silverton, CO w/attached handwritten notes on a Calendar Page	PDF 28
1185328		05/04/10	Faxed information re Water Quality, including sampling data w/marginalia	PDF 11
1185327		12/09/03	Faxed information re locations of Red Bonita Mine, Silver Ledge Mine and Mogul Mine, including sampling data	PDF 6
1185323		10/13/09	Data Gap Analysis Report for Targeted National Priority Listing Viability, Revision 2; Upper Animas Mining District, San Juan County, CO CERCLIS ID CO0001411347; TDD No. 0812-01	PDF 41
1185322		10/29/09	Data Gap Analysis for Targeted National Priority Listing Viability: E-mail from START Contractor; Upper Animas data gap doc questions	PDF 1
1185321		11/02/09	Data Gap Analysis for Targeted National Priority Listing Viability: Corres from START Contractor; Changes for the Upper Animas River Report	PDF 1
1185320		02/18/09	Data Gap Analysis for Targeted National Priority Listing Viability: E-mail from START Contractor; Upper Animas Mining District Data Gap Evaluation - Status 2/18/09	PDF 1
1185319		10/09/09	Data Gap Analysis for Targeted National Priority Listing Viability: E-mail from START Contractor	PDF 1
1185318		10/01/09	HRS Preliminary Quickscore for Data Gap Analysis for the Cement Creek Upper Animas Mining District Site, Silverton, San Juan County, CO w/attachments	PDF 12
1185317		01-01-1111	Draft Analytical Results Report: Site Inspection Comprehensive Analytical Results Report, Cement Creek Watershed (CERCLIS ID #0001411347) San Juan County, CO w/marginalia	PDF 31

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Doc ID	NR/AR	Doc Date*	Title	Images
1185261		01-01-1111	Sample Data Spreadsheet (Targeted Brownfields Assessment and related documentation from ARSG meetings, calls, or emails)	PDF 2
1185243		03/09/79	Area Map of 4775-16, San Juan County w/marginalia	PDF 2
1185242		03/09/79	Area Map of 4775-15, San Juan County	PDF 1
1185241		03/18/79	Area Map of 4775-10, San Juan County	PDF 1
1185240		04/18/79	Area Map of 4775-09, San Juan County	PDF 1
1185239		01-01-1111	Map of Section 42N 7W Section 16 w/attached close-up	PDF 3
1185238		01-01-1111	Oversized map of Gold King Prospect, San Juan County, CO	PDF 1
1185237		10/14/10	Faxed map from BLM including GM No. 13, GM No. 14, PFM and Anderson Leases	PDF 1
1185236		01/25/97	Oversized Property Map, Gold King Prospect, San Juan County, CO	PDF 1
1185235		01/25/97	Oversized map of Mining Claims, Gold King Mines Corp. San Juan County, CO	PDF 1
1185234		01-01-1111	Page 215 showing the boarding house at Gold King Mine	PDF 2
1185233		08/09/07	Page 7 of the Silverton Standard highlighting a project site map showing Upper Gold King	PDF 2
1185232		01-01-1111	Color photograph of tailings: Gold King - Spring failure	PDF 2
1185231		01-01-1111	Color photograph of tailings: Gold King - Spring failure	PDF 2
1185095		01-01-1111	Sample data comparison to GK7 data, downstream of the Gold King 7th level adits (right hand side of page cut-off)	PDF 2
1136605		05/01/07	Sampling and Analysis Plan for Segment 3a High Flow Characterization San Juan, CO w/ marginalia and editing comments	PDF 49
1136604		05/01/07	Sampling and Analysis Plan for Segment 3a High Flow Characterization San Juan County , CO includes maps	PDF 57
1136209		09/18/00	Update to Sampling and analysis plan for AML characterization and monitoring San Juan County, CO w/ attached post it note	PDF 37
1136193		01/01/00	Interim report on the scientifc investigations in the Animas River watershed, Colorado to facilitate remediation decisions by the U.S. Bureau of Land Management and the U.S. Forest Service, March 29, 2000 meeting, Denver, CO	PDF 36
1136192		01/01/00	Hydrologic and Water-Quality Data at Selected Sites in the Upper Animas River Watershed, Southwestern Colorado, 1997-99 includes a CD	PDF 27
1136190		09/17/99	Colloid formation and metal transport through two mixing zones affected by acid mine drainage near Silverton, Colorado	PDF 16
1136189		05/17/99	Letter re: Lower Animas River Sampling and Analysis Plan (SAP) w/ attached Sampling and Analysis Plan Non Point Source Program Animas River Targeting Continuation Project Lower Animas Watershed	PDF 54
1136188		01/04/99	Second Order Amending Consent Decree Case No. 94 CV 5459 Sunnyside Gold Corporation v. Colorado Water Quality Control Division of the CDPHE w/ attachments	PDF 32

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Doc ID	NR/AR	Doc Date*	Title	Images
1136187		01/01/99	The USGS Abandoned Mine Lands Initiative Protecting and Restoring the Environment Near Abandoned Mine Lands	PDF 3
1136184		08/01/98	Quantification and Simulation of Metal Loading to the Upper Animas River, Eureka to Silverton, San Juan County, Colorado, September 1997 and August 1998	PDF 82
1136183		02/05/98	Science for Watershed Decisions on Abandoned Mine Lands: Review of Preliminary Results, Denver Colorado February 4 - 5, 1998	PDF 74
1136175		10/21/96	Animas River Biological Macroinvertebrate Investigation and Monitoring Project	PDF 18
1136174		10/21/96	QualityAssurance Project Plan for Natural-Background Investigations in Selected Subbasins of the Upper Cement Creek Watershed (incomplete title page and content page only)	PDF 2
1136101		01-01-1111	Net Acid Production, Acid Neutralizing Capacity, and Associated Geophysical, Mineralogical, and Geochemcial Characteristics of Animas River Watershed Rocks Near Silverton, CO	PDF 80
1136093		01-01-1111	U.S. EPA CLP Inorganic Analysis Data Sheet w/ marginalia	PDF 1
1136084		01-01-1111	Will Clements Study Summary - estimate the relative influence of water quality, substrate condition, and habitat characteristics on the biological integrity of the Animas River	PDF 14
1133180		01-01-1111	Eureka Well Water compared to Eureka Surface Water	PDF 2
1133128		01-01-1111	Hand written notes re: Project QAPP Site Specific Sampling Plans, SOPs	PDF 10
1126074		01-01-1111	Water Sample Analysis Cement Creek Station CC-20, Mineral Creek, Animas River Stations A-72, A88	PDF 9
1126061		01/01/03	Report: Using Water-Quality Profiles to Characterize Seasonal Water Quality and Loading in the Upper Animas River Basin, Southwestern Colorado	PDF 46
1126059		01-01-1111	Monitoring Data - Table V-I Self- Monitoring Results for Outfall 004 (page is part of a report)	PDF 1
1126057		07/01/05	July 2005 Sample results Metal Removal and Lime Requirement Calculations adjusting Ph to 7 Additional Metals Removed between pH 7 and 8, pH 8 and 9	PDF 1
1126056		08/23/05	Case 1 Gladstone Water Treatment July 2005 Sampling Event American Tunnel, Silver Ledge, Red & Bonita, Upper Gold King, Mogul, Gran Mogul, Dissolved metals Discrete Flow Mixtures Total Flowrate and Average Concentrations	PDF 1
1126055		09/09/05	Table: Gladstone Water Treatment July 2005 Sampling Event Selected Dissloved Metals Validated Analytical Results Loading Calculations w/ attached other data tables	PDF 3
1126054		07/21/05	Data Chart 2 CC18 Flowrate and Metal Loading November 1994 to May 2002 w/ marginalia	PDF 1
1126015		01-01-1111	log book pages w/ contact information, sample information, data	PDF 19

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Doc ID	NR/AR	Doc Date*	Title	Images
1126012		02/01/96	Report: Naturally Occurring and Mining-Affected Dissolved Metals in Two Subbasins of the Upper Animas River Basin, Southwestern Colorado	PDF 4
1126007		07/01/05	Validated Data and Loading Calculations CC48 Data A72 Data	PDF 1
1126006		03/01/06	Active and Semi-Passive Lime Treatment of Acid Mine Drainage at Leviathan Mine, California Innovative Technology Evaluation Report	PDF 2
1126005		09/09/05	Gladstone Water Treatment July 2005 Sampling Event Duplicate Sample Comparison	PDF 1
1126003		05/22/02	Water Sample Analysis American Tunnel Discharge	PDF 13
1123674		01-01-1111	report: The Use of Mass-Loading Studies and Solute-Transport Modeling to Assist in the Development of TMDL's for Streams Affected by Mine Drainage	PDF 5
1123673		07/15/01	report: Assessment of metal loads in watersheds affected by acid mine drainage by using tracer injection and synoptic sampling: Cement Creek, Colorado, USA	PDF 25
1123672		07/12/05	Gladstone Water Treatment Plant Brownfields TBA Selected Mine Adit and Cement Creek Dissolved Metal Data (a)	PDF 3
1123671		01/01/07	American Tunnel, Red & Bonita, U. Gold King and Mogal 2005 and 2006 Dissolved Metal Loading Calculations	PDF 6
1122000		01/11/06	Gladstone Water Treatment Project Targets Brownfields Assessment Water Treatment Alternatives Conceptual Design Flow Rate and pH Setpoint Selection	PDF 4
1118167		10/05/09	Administrative Order/Consent Decree Close-Out Form w/ attached copy of Prospective Purchasers Agreement (Agreement and Covenant Not to Sue) and Accounts Receivable Inquiry	PDF 34
1087861	NR	08/01/07	Animas River LSR R8070059 Data Pkg - Raw Data Vol 1:1	0
1087860	NR	08/01/07	Analytical Results - Animas River / R8070059; Narrative & Data Results included; Not through the CLP Program	0
1062398		01-01-1111	BLM/USFS ADIT DATA (MAPS & DRAWINGS ATTACHED)	PDF 35
1062397		01-01-1111	(LIST OF DATA BY THE ANIMAS RIVER STEAKHOLDERS GROUP) ARSG: CHRONIC, ALUMINUM, CADMIUM, COPPER, IRON, MANGEN & ZINC (MARGINALIA)	PDF 4
1062396		01-01-1111	(DATA) MINE DUMP PRIORITIZATION CEMENT CREEK (CEMENT CREEK STREAM SEGMENT PRIORITIZATION & DRAINING ADIT PRIORITIZATION CEMENT CREEK ATTACHED)	PDF 3
1062395		01-01-1111	DRAFT: GEOPHYSICAL INVESTIGATIONS OF SELECTED STREAM SEGMENTS IN THE UPPER ANIMAS RIVER WATERSHED, SAN JUAN, COUNTY, COLORADO TO IDENTIFY POTENTIAL WATER LOSS ZONES (SUMMARY OF GPS DATA, RECOMMENDATIONS & DRAWINGS ATTACHED) MARGINALIA)	PDF 37
1062394		01-01-1111	CHAPTER VI - BIOLOGY TABLE OF CONTENTS (CONTENTS PAGE ONLY)	PDF 2

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Doc ID	NR/AR	Doc Date*	Title	Images
1062393		01-01-1111	15TH PERCENTILE MONTHLY FLOW REGIME, PHASE 2 TOTAL RECOVERABLE IRON REMEDIATION CONCENTRATION IN UG/L (CHARTS & DATA)	PDF 35
1062392		01-01-1111	FIGURE 3 - 4 REMEDIATION SITE MAP: UPPER BASIN ANIMAS RIVER SILVERTON, COLORADO, UPPER BASIN LAYOUT - UAA (MARGINALIA)	PDF 1
1062309		09/19/96	TABLE 4. MEAN CHEMICAL COMPOSITION OF INFLOW GROUPS, CEMENT CREEK, CO, SEP. 1996. THE GROUPS WERE DEFINED BY PRINCIPAL COMPONENTS ANALYSIS (CONCENTRATIONS IN MILLIGRAMS PER LITER)	PDF 1
1062306	NR	08/01/96	TABLE 2. RESULTS OF CHEMICAL ANALYSIS OF WATER FROM SYNOPTIC SAMPLING, CEMENT CREEK, COLORADO, AUGUST 1996 (*DESIGNATES POORLY MIXED SITE) (TABLE 3: GAIN & LOSS OF METAL LOADS FOR SELECTED AREAS OF CEMENT CREEK, CO, 09/1994 ATTACHED)	PDF 7
1062305		03/28/96	MEMORANDUM: TRACER TESTING IN FRACTURE FLOW SYSTEMS (MEMORANDUM TRANSMITS 3 COPIES OF PAPERS BY BRIANT KIMBALL, NOT ATTACHED, TRANSMISSION ONLY)	PDF 1
1062300		01/30/96	GEOLOGICAL_SURVEY: USFS-AMLIP UPPER ANIMAS RIVER BASIN WATER ANALYSES COLLECTED JULY - OCT, 1995	PDF 8
1062299		01/01/96	RECONNAISSANCE OF THE ANIMAS CANYON (AUGUST 16 -18, 1995) FINAL REPORT JANUARY 1996 (APPENDIX I DESCRIPTION OF MAP UNITS ATTACHED)	PDF 34
1062298		10/20/95	ANIMAS RIVER STAKEHOLDERS GROUP MEETING OCTOBER 20, 1995 AMERICAN LEGION BUILDING, SILVERTON, PROPOSED AGENDA	PDF 1
1062291		01/18/95	INTERAGENCY COMPARISON OF WATER QUALITY MEASUREMENTS AT SELECTED SITES IN THE UPPER ANIMAS BASIN (MARGINALIA)	PDF 1
1062290		01/01/94	WATER QUALITY DATA COLLECTED AT THE FOUR GAGES BY THE USGS AND BOR, 1994 - 1995	PDF 5
1062289		11/01/94	COUPLING OF HYDROLIC TRANSPORT AND CHEMICAL REACTIONS IN A STREAM AFFECTED BY ACID MINE DRAINAGE	PDF 9
1062288		01/01/94	SUMMARY OF TOXICITY RESULTS FOR THE REGION VIII REMAP 1994 & 1995 ANIMAS SITES ONLY, PAGE 1	PDF 1
1062287		01/01/94	DEVELOPMENT AND APPLICATION OF A REACTIVE SOLUTE TRANSPORT MODEL FOR TRACE METALS IN MOUNTAIN STREAMS (FIGURES 1 - 6: MAPS & DRAWINGS ATTACHED)	PDF 16
1062286		10/01/93	SAN JUAN RIVER BASIN, 09359020 ANIMAS RIVER BELOW SILVERTON, CO--CONTINUED, WATER-QUALITY RECORDS, PERIOD OF RECORD.--CHEMICAL ANALYSES: OCT. 1993 TO CURRENT YEAR. WATER QUALITY DATA, WATER YEAR OCT. 1994 TO SEPT. 1995	PDF 1

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Doc ID	NR/AR	Doc Date*	Title	Images
1062285		01/01/92	ENVIRONMENTAL SERVICES DIVISION, STANDARD OPERATING PROCEDURES FOR GROUNDWATER SAMPLING (DRAFT) (STANDARD OPERATING PROCEDURE FOR WELL DEVELOPMENT/ HOLLOW STEM AUGER WELL CONSTRUCTION/ AMBIENT AIR /FIELD SAMPLING, APPENDICES, EXIBITS & TABLES ATTACHED)	PDF 133
1062284		01/01/91	TABLE 1: GAIN AND LOSS OF METAL LOADS FOR SELECTED AREAS OF CEMENT CREEK, CO, (ALL VALUES IN PERCENT OF THE TOTAL LOAD, UNLESS INDICATED: MILLIGRAMS PER SECOND MG/S) (TABLE 2: CEMENT CREEK ADITS - DISSOLVED HIGH FLOW (H) / LOW FLOW (L) LOADS 1, ATTACHED)	PDF 3
1062283		02/02/90	WATER QUALITY ASSESSMENT ANIMAS RIVER BASIN, FEBRUARY 02, 1990 (TABLES, FIGURES & BUGET SUMMARY INCLUDED)	PDF 58
1062282		04/01/88	BIOLOGICAL ASSESSMENT OF MAGGIE GULCH, APRIL 1988, SAN JUAN COUNTY, COLORADO (TABLES 1 - 2: MACROINVERTEBRATE DATA FORM COLORADO DIVISION OF WILDLIFE, TABLE 3: WATER CHEMISTRY DATA MAGGIE GULCH & REFFERENCES ATTACHED)	PDF 14
60936		06/05/98	PRELIMINARY DRAFT: MASS-LOAD PROFILES; WITH MARGINALIA	PDF 21
1060925		09/11/95	SEASONALITY OF PH IN CEMENT CREEK; DATA INCLUDED	PDF 19
1060911		01-01-1111	MAPS: EPA GROUNDWATER STUDY AREAS A, B, & C; SURFACE DEPOSITS/TEST WELLS; NORTH ANIMAS RIVER VALLEY	PDF 4
1060910		01-01-1111	MAP: FIGURE 1 - SITE LOCATION MAP OF THE UPPER ANIMAS RIVER	PDF 1
1060677		01-01-1111	CHEMICAL, PHYSICAL, & BIOLOGICAL STATUS OF THE ANIMAS RIVER & ITS TRIBUTARIES ABOVE ELK CREEK & SOURCES OF METAL LOADING TO THE SYSTEM	PDF 20
819142		02/13/97	"CSF CHAIN OF CUSTODY FORM" (CASE NUMBER: 25007, SDG NUMBER: MHDS04; DATA INCLUDED)	0
819138		02/13/97	"CSF CHAIN OF CUSTODY FORM" (CASE NUMBER: 25043, SDG NUMBER: HR66; DATA INCLUDED)	0
819137		02/13/97	"CSF CHAIN OF CUSTODY FORM" (CASE NUMBER: 25043, SDG NUMBER: HR66; DATA INCLUDED)	0
819136		02/13/97	"CSF CHAIN OF CUSTODY FORM" (CASE NUMBER: 25043, SDG NUMBER: HR66; DATA INCLUDED)	0
819135		02/13/97	"CSF CHAIN OF CUSTODY FORM" (CASE NUMBER: 25043, SDG NUMBER: HR66; DATA INCLUDED)	0
819134		02/13/97	"CSF CHAIN OF CUSTODY FORM" (CASE NUMBER: 25043, SDG NUMBER: HR66; DATA INCLUDED)	0
819133		12/04/96	"COMPLETE SAMPLE DELIVERY GROUP FILE (CSF) EVIDENCE AUDIT CHECKLIST" (RAS NUMBER: 25043, SDG NUMBER: HR66)	0
818718		11/12/96	"COMPLETE SAMPLE DELIVERY GROUP FILE (CSF) EVIDENCE AUDIT CHECKLIST" (RAS NUMBER: 25007, SDG NUMBER: MHDS04; COMPUTER DISKETTE INCLUDED)	0
818717		02/13/97	"CSF CHAIN OF CUSTODY FORM" (CASE NUMBER: 25043, SDG NUMBER: MHDB46; DATA INCLUDED)	0

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Doc ID	NR/AR	Doc Date*	Title	Images
818716		11/19/96	"COMPLETE SAMPLE DELIVERY GROUP FILE (CSF) EVIDENCE AUDIT CHECKLIST" (RAS NUMBER: 25043, SDG NUMBER: MHDB46; COMPUTER DISKETTE INCLUDED)	0
818715		02/13/97	"CSF CHAIN OF CUSTODY FORM" (CASE NUMBER: 25043, SDG NUMBER: MHDB26; DATA INCLUDED)	0
818714		11/22/96	"COMPLETE SAMPLE DELIVERY GROUP FILE (CSF) EVIDENCE AUDIT CHECKLIST" (RAS NUMBER: 25043, SDG NUMBER: MHDB26; COMPUTER DISKETTE INCLUDED)	0
818713		02/13/97	"CSF CHAIN OF CUSTODY FORM" (CASE NUMBER: 25043, SDG NUMBER: MHDB25; DATA INCLUDED)	0
818712		11/22/96	"COMPLETE SAMPLE DELIVERY GROUP FILE (CSF) EVIDENCE AUDIT CHECKLIST" (RAS NUMBER: 25043, SDG NUMBER: MHDB25; COMPUTER DISKETTE INCLUDED)	0
818711		02/13/97	"CSF CHAIN OF CUSTODY FORM" (CASE NUMBER: 25007, SDG NUMBER: MHDB16; DATA INCLUDED)	0
818710		11/06/96	"COMPLETE SAMPLE DELIVERY GROUP FILE (CSF) EVIDENCE AUDIT CHECKLIST" (RAS NUMBER: 25007, SDG NUMBER: MHDB16; COMPUTER DISKETTE INCLUDED)	0
818709		02/13/97	"CSF CHAIN OF CUSTODY FORM" (CASE NUMBER: 25043, SDG NUMBER: MHDB01; DATA INCLUDED)	0
818708		11/12/96	"COMPLETE SAMPLE DELIVERY GROUP FILE (CSF) EVIDENCE AUDIT CHECKLIST" (RAS NUMBER: 25043, SDG NUMBER: MHDB01; COMPUTER DISKETTE INCLUDED)	0
380086		04/01/98	COMPREHENSIVE ANALYTICAL RESULTS REPORT CEMENT CREEK WATERSHED (CERCLIS ID #CO0001411347)	PDF 534
380085		09/22/98	APPENDIX E: DRINKING WATER SAMPLING RESULTS - LETTERS TO HOMEOWNERS	0
380084		09/22/98	NOTES REGARDING SILVERTON DW DATA.	0
380083		10/21/98	GROUNDWATER/DRINKING WATER SAMPLES TAKEN IN THE UPPER ANIMAS RIVER BASIN	0
380082		08/15/97	(LETTER TRANSMITTING A COPY OF THE LABORATORY OF DRINKING WATER)	0
380081		08/15/97	(LETTER TRANSMITTING A COPY OF THE LABORATORY ANALYSIS OF THE LENORE LOAD DRAINING MINE)	0
380080		08/15/97	(LETTER TRANSMITTING A COPY OF THE LABORATORY ANALYSIS OF WELL WATER)	0
380078		02/26/98	POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM	PDF 4
380077		08/15/97	(LETTER TRANSMITTING A COPY OF THE LABORATORY ANALYSIS OF YOUR WELL WATER)	0
380076		08/15/97	(LETTER TRANSMITTING A COPY OF THE LABORATORY ANALYSIS OF WELL WATER)	0
380075		08/04/97	SILVERTON GROUNDWATER WELL SAMPLING - RESULT NOTIFICATION LETTERS (LETTERS ATTACHED)	0

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*01-01-1111 may indicate unknown date

Doc ID	NR/AR	Doc Date*	Title	Images
380074		10/31/97	HAZARDOUS MATERIAL AND WASTE MANAGEMENT DIVISION SITE INSPECTION SAMPLING ACTIVITIES REPORT, UPPER ANIMAS WATERSHED SAN JUAN COUNTY, COLORADO	0
380073		10/31/97	(LETTER TRANSMITTING THE UPPER ANIMAS WATERSHED SAMPLING ACTIVITIES REPORT)	0
380072		10/14/97	(FOR SAMPLES COLLECTED IN SEPTEMBER THE CLP LAB FAILED TO PERFORM MATRIX SPIKE/MATRIX SPIKE DUPLICATES FOR THE ORGANIC PARAMETERS)	0
380071		02/01/97	MINERAL CREEK FEASIBILITY INVESTIGATIONS REPORT UPPER ANIMAS RIVER BASIN	0
380070		01/06/98	REGION VIII SUMMARY OF DATA QUALITY ASSURANCE REVIEW, INORGANICS CASE NO. 25686, REPORT NO. MHDH48	0
380069		01/06/98	REGION VIII SUMMARY OF DATA QUALITY ASSURANCE REVIEW, INORGANIC - CASE NO. 25686, REPORT NO. MHDW78	0
380068		01/06/98	REGION VIII SUMMARY OF DATA QUALITY ASSURANCE REVIEW, INORGANIC, CASE NO. 25686, REPORT NO. MHDW98	0
380067		12/23/97	REGION VIII SUMMARY OF DATA QUALITY ASSURANCE REVIEW, INORGANIC CASE NO. 25686, REPORT NO. MHDX40	0
380066		12/23/97	REGION VIII SUMMARY OF DATA QUALITY ASSURANCE REVIEW, ORGANICS - VOA, BNA AND PEST/PCB, CASE NO. 25686, REPORT NO. HS260	0
380065		12/23/97	REGION VIII SUMMARY OF DATA QUALITY ASSURANCE REVIEW, INORGANIC CASE NO. 25686, REPORT NO. MHDX20	0
380064		12/23/97	REGION VIII SUMMARY OF DATA QUALITY ASSURANCE REVIEW, ORGANICS - VOA, BNA AND PEST/PCB, CASE NO. 25686, REPORT NO. HS268	0
380061	NR	07/16/97	CEMENT CR. ARR (ANALYTICAL RESULTS REPORT) DATA TABLES	0
380060	NR	09/30/97	(DOCUMENT INVENTORY - CASE NARRATIVE, REPORT OF ANALYSIS, QC SUMMARY, CROSS REFERENCE SHEET, SAMPLE LOG-IN SHEET, RAW DATA TOC DATA FROM ACCU-LABS RESEARCH, INC.)	0
380059		09/09/97	REQUEST FOR ROUTINE ANALYTICAL SERVICES	0
380058	NR	11/03/97	DATA PACKAGE CASE NO. 25686, SDG NO. HS268	0
380057	NR	11/03/97	DATA PACKAGE CASE NO. 25686, SDG NO. HS260 (WITH ONE (1) ATTACHMENT)	0
380056	NR	10/31/97	DATA PACKAGE CASE NO. 25686, SDG NO. MHDK48	0
380055	NR	10/31/97	DATA PACKAGE CASE NO. 25686, SDG NO. MHDW78	0
380054	NR	10/31/97	DATA PACKAGE CASE NO. 25686, SDG NO. MHDW98	0
380053	NR	10/31/97	DATA PACKAGE CASE NO. 25686, SDG NO. MHDX20	0
380052	NR	10/31/97	DATA PACKAGE CASE NO. 25686, SDG NO. MHDX40	0
380051		07/30/97	SITE INSPECTION - SAMPLING AND ANALYSIS PLAN, UPPER ANIMAS WATERSHED - SILVERTON MINING DISTRICT, SAN JUAN COUNTY, COLORADO	0
380050		12/20/96	DATA VALIDATION REPORT FOR CASE NO. 25043, MHDB01 FOR THE CEMENT CREEK WATERSHED PROJECT	0

NR = not releasable

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Doc ID	NR/AR	Doc Date*	Title	Images
380049		12/20/96	TRANSMITTAL OF DATA VALIDATION REPORT FOR CASE 25007, SDG MHDB01 FOR THE CEMENT CREEK WATERSHED PROJECT	0
380048		12/20/96	DATA VALIDATION REPORT FOR CASE NO. 25007, MHDBB16 FOR THE CEMENT CREEK WATERSHED PROJECT	0
380047		12/20/96	TRANSMITTAL OF DATA VALIDATION REPORT FOR CASE NO. 25043, SDG MHDB16 FOR THE CEMENT CREEK WATERSHED PROJECT	0
380046		12/20/96	DATA VALIDATION REPORT FOR CASE NO. 25007, MHDSO4 FOR THE CEMENT CREEK WATERSHED PROJECT	0
380045		12/20/96	TRANSMITTAL OF DATA VALIDATION REPORT FOR CASE NO. 25043, SDG MHDS04 FOR THE CEMENT CREEK WATERSHED PROJECT	0
380044		12/20/96	DATA VALIDATION REPORT FOR CASE NO. 25043, MHDB46 FOR THE CEMENT CREEK WATERSHED PROJECT	0
380043		12/20/96	TRANSMITTAL OF DATA VALIDATION REPORT FOR CASE NO. 25007, SDG MHDB46 FOR THE CEMENT CREEK WATERSHED PROJECT	

NR = not releasable

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Appendix C
Final UAMD QAPP Review Crosswalk Form

EPA REGION 8 QA DOCUMENT REVIEW CROSSWALK

QAPP/FSP/SAP for: *(check appropriate box)*	**Entity** *(grantee, contractor, EPA AO, EPA Program, Other)*	**Regulatory Authority EPA and/or Funding Mechanism**	___ **40 CFR 31 for Grants** ___ **48 CFR Part 46 for Contracts** _X_ **Interagency Agreement** ___ **EPA Administrative Order** ___ **EPA Program Funding** ___ **EPA Program Regulation** ___ **EPA CIO 2105**
___ **GRANTEE** ___ **CONTRACTOR** ___ **EPA** _X_ **Other**	U.S. Army Corps of Engineers, 1616 Capital Avenue, Omaha, NE 68102		
Document Title *[Note: Title will be repeated in Header]*	QAPP, Review and Organization of Existing Environmental Data for Upper Animas Mining District, San Juan County, Colorado		
QAPP/FSP/SAP Preparer	CB&I Federal Services LLC		
Period of Performance *(of QAPP/FSP/SAP)*	**May 7, 2015 to November 13, 2015**	**Date Submitted for Review**	June 1, 2015
EPA Project Officer **EPA Project Manager**	Paula Schmittdiel, Remedial Project Manager, EPA	**PO Phone #** **PM Phone #**	303-312-6861
QA Program Reviewer or Approving Official	Christopher Fassero, Project Manager, USACE; 402-995-2679	**Date of Review**	June 15, 2015

Documents to Review:

1. QAPP written by Grantee or EPA must also include for review:
   Work Plan (WP) / Statement of Work (SOW) / Program Plan (PP) / Research Proposal (RP)

2. QAPP written by Contractor must also include for review:
   a) Copy of signed QARF for Task Order
   b) Copy of Task Order SOW
   c) Made available hard or electronic copy of approved QMP
   d) If QMP not approved, provide Contract SOW

3. For a Field Sampling Plan (FSP) or Sampling & Analyses Plan (SAP), the Project QAPP must also be provided.
   OR
   The FSP or SAP must be clearly identified as a stand-alone QA document and must contain all QAPP required elements (Project Management, Data Generation/Acquisition, Assessment and Oversight, and Data Validation and Usability).

Documents Submitted for QAPP Review:

1. **QA Document(s) submitted for review:**

QA Document	Document Date	Document Stand-alone	Document with QAPP
QAPP		Yes / No	
FSP		Yes / No	Yes / No
SAP		Yes / No	Yes / No
SOP(s)			Yes / No

2. **WP/SOW/TO/PP/RP Date** _____
   WP/SOW/TO/RP Performance Period _____
3. **QA document consistent with the:**
   WP/SOW/PP for grants? Yes / No
   SOW/TO for contracts? Yes / No
4. **QARF signed by R8 QAM** Yes / No / NA
   Funding Mechanism IA
   Amount _____

Summary of Comments *(highlight significant concerns/issues)*:

1. Comment #1 The EPA Crosswalk form and the Transmittal letter should be separate documents from the QAPP.
2. Comment #2
3. Comment #3
4. **The** U.S. Army Corps of Engineers, 1616 Capital Avenue, Omaha, NE 68102 **must address the comments in the Summary of Comments, as well as those identified in the Comment section(s) that includes a "Response (date)" and Resolved (date)".**

Comment [VJ1]: EPA QUESTION: Is this the correct date for the POP?
CB&I RESPONSE: The correct POP is from May 7, 2015 to November 13, 2015.

Comment [VJ2]: EPA COMMENTS: A copy of the IA SOW should also be included with the Submittal of the final QAPP.
One of these should be submitted.
CB&I RESPONSE: The Performance Work Statement (PWS) has been included as Appendix A in the final QAPP.

Comment [VJ3]: EPA COMMENT: These have not been submitted with the QAPP at time of review.
CB&I RESPONSE: The Performance Work Statement (PWS) has been included as Appendix A in the final QAPP.

Comment [VJ4]: EPA COMMENT: The QARF is a requirement when EPA is doing the contracting. As for QMP, please reference the EPA approved USACE QMP. CB&I's QMP can include EPA requirements found in the R8 QA guidance on QMPs as well as any USACE requirements. These items can be submitted as one amendment to the approved QAPP when they are available. A copy of the SOW for the USACE task order should be submitted with the final QAPP submittal for a complete record.
CB&I RESPONSE: The EPA approved USACE QMP has been referenced in the Introduction (page 1) and added to the References (page 1_).

Comment [VJ5]: EPA COMMENT: OK on 2nd submittal [i.e., final QAPP can include crosswalk as an appendix].

Element	Acceptable *Yes/No/NA*	Page/ Section	Comments
A. Project Management			
A1. Title and Approval Sheet			
a. Contains project title	Yes	Pg 2	Also on first page (cover), not numbered - Site Name should be "Upper Animas Mining District", It is confusing to have some signatures on the cover page and others on Work sheet #1 – can they be combined? The Project name on page 2 should include the site name – Upper Animas Mining District. If b/c of the contracting-IA documents, this is not possible, then the Upper Animas Mining District should be listed in parentheses on title page and header. The signature block has been removed from the cover page and all signatures are included on WS#1. Site name has been changed to Animas River Mining District as requested, in title and in several text occurrences.
b. Date and revision number line (for when needed)	Yes	*	*Revision / date are in the document header No action required.
c. Indicates organization's name	Yes	Pg 2	This is not clear on page 2 – which organization is named. Page 2 (WS#1/#2) now indicates organization name and position title above each signature line.
d. Date and signature line for organization's project manager	Yes	Pg 2	The actual name, and title for each signatory should be provided in the signature block for each organization's approving official. Same response as for A1.c above.
e. Date and signature line for organization's QA manager	Yes	Pg 2	Same comment as d. above. Same response as for A1.c above.
f. Other date and signatures lines, as needed	NA	Pg 2	
A2. Table of Contents			
a. Lists QA Project Plan information sections	Yes	Pg i	
b. Document control information indicated	Yes	*	*Document control number is stated on cover page (not numbered) No action required.
A3. Distribution List			
Includes all individuals who are to receive a copy of the QA Project Plan and identifies their organization	Yes	Pg 6	Should also include Elizabeth Fagan, EPA Remedial Project Manager for distribution. This chart is confusing b/c it is trying to fulfill 2 purposes. Elizabeth Fagan, RPM has been added to the chart, which satisfies requirements of the WS.
A4. Project/Task Organization			

a. Identifies key individuals involved in all major aspects of the project, including contractors	NO	Pg 7	CB&I's response says a Data Manager will be designated but the organization chart does not say who that will be. Please provide the page # in the QAPP. CB&I has identified Barbara Matz as the Data Manager, and have added her name to the organization chart on page 7.
b. Discusses their responsibilities	Yes	Pg 7	
c. Project QA Manager position indicates independence from unit generating data	Yes	Pg 7	Based on the table on page 7, the independence of the QC (or is it QA?) manager is not clear. The Org Chart has been modified to separate Oversight, including the Quality Manager, from Data Evaluation.
d. Identifies individual responsible for maintaining the official, approved QA Project Plan	Yes	Pg 7 Pg 9	Maintenance of the QAPP a role of the Project QC Manager (p 7). Review and approval are provided by EPA, via the PM (p 9) It is not clear who with the contractor is responsible for maintaining the approved QAPP – perhaps a phrase can be added to Mr. Flynn's description. "maintains the approved QAPP." has been added to Mr. Flynn's description on page 9.
e. Organizational chart shows lines of authority and reporting responsibilities	Yes	Pg 6	
A5. Problem Definition/Background			
a. States decision(s) to be made, actions to be taken, or outcomes expected from the information to be obtained	Yes	Section 11	
b. Clearly explains the reason (site background or historical context) for initiating this project	Yes	Pg 1 Sec. 11	
c. Identifies regulatory information, applicable criteria, action limits, etc. necessary to the project	NA	NA	
A6. Project/Task Description			
a. Summarizes work to be performed, for example, measurements to be made, data files to be obtained, etc., that support the project's goals	Yes	Sec. 11 Appendix A	Only shows a portion of the documents/data that may be available. This is the list of documents known at time of QAPP creation. Additional documents will be added to the list as they are found.
b. Provides work schedule indicating critical project points, e.g., start and completion dates for activities such as sampling, analysis, data or file reviews, and assessments	Yes	Sec. 14.1	
c. Details geographical locations to be studied, including maps where possible	Yes	Figure 1	
d. Discusses resource and time constraints, if applicable	Yes	Sec. 11.4	
A7. Quality Objectives and Criteria			

a. Identifies - performance/measurement criteria for all information to be collected and acceptance criteria for information obtained from previous studies, - including project action limits and laboratory detection limits and - range of anticipated concentrations of each parameter of interest	Yes	Sec. 11.6	
b. Discusses precision	NA	NA	
c. Addresses bias	NA	NA	
d. Discusses representativeness	NA	NA	
e. Identifies the need for completeness	Yes	Appendix B	Document Evaluation Checklist, Page 2 of 2 No action required.
f. Describes the need for comparability	NA	NA	
g. Discusses desired method sensitivity	NA	NA	
A8. Special Training/Certifications			
a. Identifies any project personnel specialized training or certifications	Yes	Pg 7	
b. Discusses how this training will be provided	NA	NA	
c. Indicates personnel responsible for assuring training/certifications are satisfied	NA	NA	
d. identifies where this information is documented	NA	NA	
A9. Documentation and Records			
a. Identifies report format and summarizes all data report package information	Yes	Appendix B	Document Evaluation Checklist, Page 1 of 2 No action required.
b. Lists all other project documents, records, and electronic files that will be produced	Yes	Sec. 14.1 Sec 29	
c. Identifies where project information should be kept and for how long	Yes	Pg 14	The length of time that project information will be kept should be stated. All files will be provided to EPA as electronic attachment to Final Deliverable.
d. Discusses back up plans for records stored electronically	Yes	Pg 14	Since most records are stored electronically, if those records were not obtained from EPA records center, then, how and where these records would be stored (or provided to EPA) should be dicussed. All files will be provided to EPA as electronic attachment to Final Deliverable.

e. States how individuals identified in A3 will receive the most current copy of the approved QA Project Plan, identifying the individual responsible for this	NA	NA	
B. Data Generation/Acquisition			
B1. Sampling Process Design (Experimental Design)			
a. Describes and justifies design strategy, indicating size of the area, volume, or time period to be represented by a sample	NA	NA	
b. Details the type and total number of sample types/matrix or test runs/trials expected and needed	NA	NA	
c. Indicates where samples should be taken, how sites will be identified/located	NA	NA	
d. Discusses what to do if sampling sites become inaccessible	NA	NA	
e. Identifies project activity schedules such as each sampling event, times samples should be sent to the laboratory, etc.	NA	NA	
f. Specifies what information is critical and what is for informational purposes only	NA	NA	
g. Identifies sources of variability and how this variability should be reconciled with project information	NA	NA	
B2. Sampling Methods			
a. Identifies all sampling SOPs by number, date, and regulatory citation, indicating sampling options or modifications to be taken	NA	NA	
b. Indicates how each sample/matrix type should be collected	NA	NA	
c. If in situ monitoring, indicates how instruments should be deployed and operated to avoid contamination and ensure maintenance of proper data	NA	NA	
d. If continuous monitoring, indicates averaging time and how instruments should store and maintain raw data, or data averages	NA	NA	
e. Indicates how samples are to be homogenized, composited, split, or filtered, if needed	NA	NA	
f. Indicates what sample containers and sample volumes should be used	NA	NA	

g. Identifies whether samples should be preserved and indicates methods that should be followed	NA	NA	
h. Indicates whether sampling equipment and samplers should be cleaned and/or decontaminated, identifying how this should be done and by-products disposed of	NA	NA	
i. Identifies any equipment and support facilities needed	NA	NA	
j. Addresses actions to be taken when problems occur, identifying individual(s) responsible for corrective action and how this should be documented	NA	NA	
B3. Sample Handling and Custody			
a. States maximum holding times allowed from sample collection to extraction and/or analysis for each sample type and, for in-situ or continuous monitoring, the maximum time before retrieval of information	NA	NA	
b. Identifies how samples or information should be physically handled, transported, and then received and held in the laboratory or office (including temperature upon receipt)	NA	NA	
c. Indicates how sample or information handling and custody information should be documented, such as in field notebooks and forms, identifying individual responsible	NA	NA	
d. Discusses system for identifying samples, for example, numbering system, sample tags and labels, and attaches forms to the plan	NA	NA	
e. Identifies chain-of-custody procedures and includes form to track custody	NA	NA	
B4. Analytical Methods			
a. Identifies all analytical SOPs (field, laboratory and/or office) that should be followed by number, date, and regulatory citation, indicating options or modifications to be taken, such as sub-sampling and extraction procedures	NA	NA	
b. Identifies equipment or instrumentation needed	NA	NA	
c. Specifies any specific method performance criteria	NA	NA	
d. Identifies procedures to follow when failures occur, identifying individual responsible for corrective action and appropriate documentation	NA	NA	

e. Identifies sample disposal procedures	NA	NA	
f. Specifies laboratory turnaround times needed	NA	NA	
g. Provides method validation information and SOPs for nonstandard methods	NA	NA	
B5. Quality Control			
a. For each type of sampling, analysis, or measurement technique, identifies QC activities which should be used, for example, blanks, spikes, duplicates, etc., and at what frequency	NA	NA	
b. Details what should be done when control limits are exceeded, and how effectiveness of control actions will be determined and documented	NA	NA	
c. Identifies procedures and formulas for calculating applicable QC statistics, for example, for precision, bias, outliers and missing data	NA	NA	
B6. Instrument/Equipment Testing, Inspection, and Maintenance			
a. Identifies field and laboratory equipment needing periodic maintenance, and the schedule for this	NA	NA	
b. Identifies testing criteria	NA	NA	
c. Notes availability and location of spare parts	NA	NA	
d. Indicates procedures in place for inspecting equipment before usage	NA	NA	
e. Identifies individual(s) responsible for testing, inspection and maintenance	NA	NA	
f. Indicates how deficiencies found should be resolved, re-inspections performed, and effectiveness of corrective action determined and documented	NA	NA	
B7. Instrument/Equipment Calibration and Frequency			
a. Identifies equipment, tools, and instruments that should be calibrated and the frequency for this calibration	NA	NA	
b. Describes how calibrations should be performed and documented, indicating test criteria and standards or certified equipment	NA	NA	
c. Identifies how deficiencies should be resolved and documented	NA	NA	
B8. Inspection/Acceptance for Supplies and Consumables			

a. Identifies critical supplies and consumables for field and laboratory, noting supply source, acceptance criteria, and procedures for tracking, storing and retrieving these materials	NA	NA	
b. Identifies the individual(s) responsible for this	NA	NA	
B9. Use of Existing Data (Non-direct Measurements)			
a. Identifies data sources, for example, computer databases or literature files, or models that should be accessed and used	NA	NA	
b. Describes the intended use of this information and the rationale for their selection, i.e., its relevance to project	NA	NA	
c. Indicates the acceptance criteria for these data sources and/or models	NA	NA	
d. Identifies key resources/support facilities needed	NA	NA	
e. Describes how limits to validity and operating conditions should be determined, for example, internal checks of the program and Beta testing	NA	NA	
B10. Data Management			
a. Describes data management scheme from field to final use and storage	NA	NA	
b. Discusses standard record-keeping and tracking practices, and the document control system or cites other written documentation such as SOPs	Yes	NA	The QAPP should discuss some sort of system to track the compilation of data and documents – the organization and document tracking system. A database will be created and maintained to list documents obtained and evaluation ranking of those reviewed.
c. Identifies data handling equipment/procedures that should be used to process, compile, analyze, and transmit data reliably and accurately	NA	NA	
d. Identifies individual(s) responsible for this	NO	Page 7	The QAPP should identify the key person responsible for organizing the records and documents reviewed for this work. A Data Manager will be designated. QAPP does not name who the person will be in the Org chart. Barbara Matz will be the CB&I Data Manager, and has been identified in the organization chart on page 7.
e. Describes the process for data archival and retrieval	NA	NA	
f. Describes procedures to demonstrate acceptability of hardware and software configurations	NA	NA	
g. Attaches checklists and forms that should be used	Yes	NA	The Document Evaluation Checklist should be referred to. It is referenced at various places in the text.

C. Assessment and Oversight			
C1. Assessments and Response Actions			
a. Lists the number, frequency, and type of assessment activities that should be conducted, with the approximate dates	Yes	NA	During the course of the review, there should be some oversight of the work and assessment activity to ensure that all project workers are following the same protocols. This can be a fairly simple description. The revised Org Chart breaks CB&I project staff into oversight and data evaluation groups.
b. Identifies individual(s) responsible for conducting assessments, indicating their authority to issue stop work orders, and any other possible participants in the assessment process	Yes	NA	See comment in a. above. See response to C1.a above
c. Describes how and to whom assessment information should be reported	No	Page 10	Should this be the responsibility of the QC manager? Information obtained by data evaluation staff will be reported to project oversight personnel. The QAPP should specify who in Oversight is the responsible person and reference in the column to the left the page/worksheet where it is addressed. CB&I Project Manager, David Cacciatore, is responsible for all reporting to USACE and EPA oversight personnel, as indicated in the worksheet on page 10.
d. Identifies how corrective actions should be addressed and by whom, and how they should be verified and documented	Yes	NA	According to the work sheet #6 on page 9, the QC manager is responsible for corrective action. NOTE – There are a number of places in the QAPP where Mr. Flynn's position isn't consistent – in some places he is a QC manager and in the org chart, he is listed as a QA manager. Please clarify. Mr. Flynn's title is Quality Manager – this has been corrected in the worksheets.
C2. Reports to Management			
a. Identifies what project QA status reports are needed and how frequently	Yes	NA	This can be as simple as the biweekly conference calls with EPA and USACE or a simple email. Added to Section 14.2: "Throughout the duration of the project, bi-weekly status reports will be provided in a conference call or by electronic mail if a call is not held."
b. Identifies who should write these reports and who should receive this information	Yes	NA	Per comment in a. above. Also added to Section 14.2: "The status reports will be prepared by the PM and transmitted to the RPM."

D. Data Validation and Usability			
D1. Data Review, Verification, and Validation			
Describes criteria that should be used for accepting, rejecting, or qualifying project data	NA	NA	
D2. Verification and Validation Methods			
a. Describes process for data verification and validation, providing SOPs and indicating what data validation software should be used, if any	NA	NA	
b. Identifies who is responsible for verifying and validating different components of the project data/information, for example, chain-of-custody forms, receipt logs, calibration information, etc.	NA	NA	
c. Identifies issue resolution process, and method and individual responsible for conveying these results to data users	NA	NA	
d. Attaches checklists, forms, and calculations	NA	NA	
D3. Reconciliation with User Requirements			
a. Describes procedures to evaluate the uncertainty of the validated data	NA	NA	
b. Describes how limitations on data use should be reported to the data users	NA	NA	

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Appendix D
Document Evaluation Checklist

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Document Evaluation Checklist
Review of Existing Environmental Data, Upper Animas Watershed, San Juan County, CO

Document Number:	Document Date:
Reviewed by:	Review Date:
Document Type: Plan / Report / Presentation / Other:	
Topic: Historic / Planning / Assessment / Characterization / Remediation /	
Document Version (if applicable): Draft / Draft Final / Final / Revised Final /	
Prepared by:	Prepared for:
Document Title: (optional)	

Initial Evaluation: Check all that apply to the document

	Full Plan/Report text
	Only minor text, e.g.: email / memo / letter / presentation / other:
	Work Plan is referenced
	Sampling and Analysis Plan is referenced
	Quality Assurance / Quality Control Plan is referenced
	Historic / background information
	Figure(s)
	Photographs
	Data Table(s)
	Laboratory Reports
	Chain of Custody forms
	Data Validation and/or Laboratory Data Quality Assessment
	Sample Collection Logs
	Sample Collection Procedure
	Regulatory Criteria
	Regulatory oversight by (Agency):
	Total number of points = Document Ranking

Is this a Primary Data Source (primary document where data are reported)? YES / NO

If YES, proceed to Document Data Summary (Page 2 of this Evaluation).

If NO, is the Primary Data Source available? YES / NO

If YES, STOP – Perform evaluation of the primary document only.

If NO, continue to Document Data Summary (Page 2 of this Evaluation).

Document Evaluation Checklist
Review of Existing Environmental Data, Upper Animas Watershed, San Juan County, CO

Document Number:	Document Date:
Reviewed by:	Review Date:

Document Data Summary

Type of Data (check all that apply):

___ Groundwater ___ Surface water ___ AMD/MIW ___ Mine waste

___ Soil ___ Sediment ___ Boring logs ___ Special analytical (e.g. speciation)

___ Site hydrology ___ Stream hydrology ___ Other:

For each applicable item below, award the points indicated in parentheses.

Data Management Process — Score

Were data collected under guidance of a Work Plan / Sampling & Analysis Plan / other planning document? (10 points) _____

Data Records Type (check and award all that apply):
___ Chain of Custody (5) ___ Field Reports (5) _____

Form of Data Available (check and award all that apply):
___ Laboratory Summary Report (2) _____
___ Complete Data Package(s) (5) _____
___ Field QC Data (2) _____
___ Laboratory QC Data (2) _____
___ Data Summary Table(s) (2) _____
___ Graphic presentation of data (2) _____
___ Entered into Database (5) _____
Where are the data stored, if known?_____
Are the data accessible? Yes / No

Data Validation (check and award all that apply):
___ Data were validated by generator (2) _____
___ Third-party data validation was performed (5) _____
Are data validation documents available? Yes / No
Have data qualifiers been applied? Yes / No

Total Points Awarded, this page only _____

Reviewer Comments: